



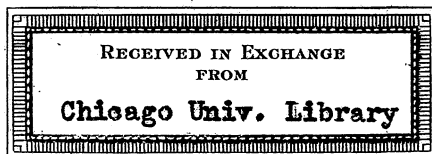
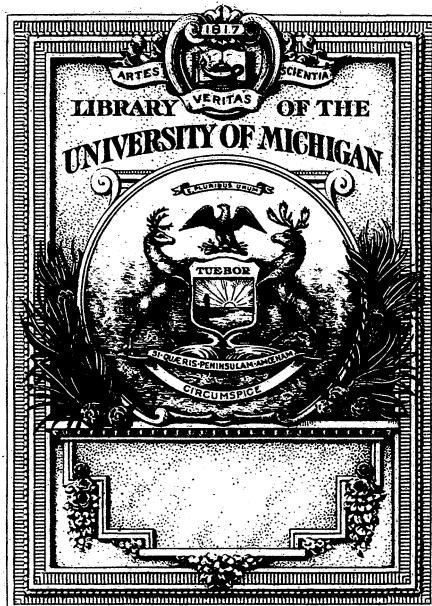
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THE
GULF OF ADEN
PILOT
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THE
GULF OF 'ADEN PILOT.

SOKÓTRA AND ADJACENT ISLANDS,
SOMÁLI AND ARABIAN COASTS IN THE GULF OF 'ADEN,
AND THE EAST COAST OF ARABIA.

ORIGINALLY COMPILED IN 1863 BY COMMANDER C. Y. WARD, I.N.,
FROM MEMOIRS BY OFFICERS OF THE INDIAN NAVY.

SECOND EDITION, WITH ADDITIONS.

PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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ARABIC WORDS USED IN THE DIRECTIONS, AND ON THE CHARTS.

<i>Arabic.</i>	<i>English.</i>
Bayat.....	A shoal, dry at low water.
Bander.....	A harbour or anchorage.
Balad.....	A town or village.
Bar.....	The land.
Ghubbet.....	A bay or gulf.
Hassar.....	A rock.
Jebel.....	A hill or mountain; also an island.
Jezirat.....	An island.
Kinásat.....	A shoal or sandbank.
Karn or Garn.....	A peaked hill.
Khór.....	A creek or lagoon.
Mersa.....	An anchorage.
Nakhíl.....	A date grove.
Rak, Rakat, or Rejjat.....	A shallow flat bank, extending off shore.
Rás.....	A cape or headland.
Sháb or Shátṭ.....	A rocky shoal.
Wadí or Wady.....	A valley.

The orthography of the names of places is that adopted by the Royal Geographical Society in their journal. The consonants are to be sounded as in English; the accented words as in Italian, or as in the English words *father*, *prey*, *fatigue*, *cold*, *rude*, and the unaccented vowels as in the English words, *about*, *well*, *hill*, *on*, *under*.

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THE Gulf of 'Aden Pilot contains sailing directions for the Gulf of 'Aden and the east coast of Arabia. They have been compiled from the following authorities—officers of the late Indian Navy :

The island of Sokótra is from the survey of Captain S. B. Haines, in 1834-35; and the islands to the westward from the survey of Lieutenant A. M. Grieve in 1848.

The Somáli coast from Rás Hafún to the entrance to the Red Sea is from the surveys of Captain Carless in 1838, Lieutenant W. C. Barker in 1841, and Lieutenant A. M. Grieve in 1848.

The Arabian coast, from the entrance to the Red Sea to Rás-al-Hádd, is from the surveys of Captain S. B. Haines in 1833-34-35; Captain J. P. Sanders in 1844-45, and Lieutenant A. M. Grieve in 1846-48-49, including a Memoir by H. J. Carter, Esq., Bombay Medical Service.

The description of the prevailing winds and currents is from the same sources, as also from the investigations made by Lieutenant A. D. Taylor.

In the present edition, which has been prepared by Captain G. H. Inskip, R.N., the most recent information, resulting from the visits of Her Majesty's ships, has been incorporated.

F. J. E.

Hydrographic Office, Admiralty, London,
February, 1882.

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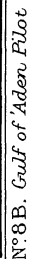
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**IN THIS WORK THE BEARINGS ARE ALL MAGNETIC
EXCEPT WHERE MARKED AS TRUE.**

**THE DISTANCES ARE EXPRESSED IN SEA MILES OF
60 TO A DEGREE OF LATITUDE.**

**A CABLE'S LENGTH IS ASSUMED TO BE EQUAL TO
100 FATHOMS.**



THE GULF OF 'ADEN.

CHAPTER I.

SOUTH-WEST MONSOON; NORTH-EAST MONSOON.—TEMPERATURE. — GALES. — HURRICANES OR CYCLONES. — CURRENTS.—TIDES.—GENERAL REMARKS ON MAKING PASSAGES.

The SOUTH-WEST MONSOON commences in the Arabian sea, about the middle or end of April, and continues to the end of September, liable to a variation of from 10 to 15 days, being sometimes earlier, sometimes later, but it is not felt in its full force until May or even June; it continues in full force during the months of June, July, and August, blowing stronger and steadier, and accompanied by a heavier sea in the open sea than on the coasts. Near the Hindostan coast, the wind is variable in direction, and blows in squalls, accompanied by heavy rain, mostly from the westward of north. On the Sindh coast strong west-south-westerly winds set in about the beginning of April, causing a heavy swell; strong westerly winds blow at the same time to the westward of Ceylon, and north-westerly winds at the lower part of the Malabar coast.*

On the eastern coast of Africa the wind blows very strong from the S.S.W., and continues with full force from that quarter through the channel between the island of Sokótra and Rás 'Aşır (cape Guardafui), and thence across the gulf of 'Aden to Rás Rehmat (which signifies in Arabic the cape of Wind's Death), a cape south and west of Makallah. On this line a vessel generally enters the monsoon when proceeding from the Red sea to the eastward.

Within the Gulf of 'Aden, that is, between the meridians of Rás 'Aşır and Bab-el-Mandeb, the winds, during the season, are very variable; as a general rule, they are freshest by day and lightest by night. In April and May they vary from E.N.E. to S.E. and South with clear

* See Admiralty Atlas of Wind and Current charts for Pacific, Atlantic, and Indian oceans, 1879.

weather, but lazy weather is sometimes experienced; close in-shore land winds are occasionally felt from 4 h. to 8h. a.m. June is a very unsettled month, the wind uncertain, weather at times clear, but generally hazy; in the morning it is either calm, or there are very light airs, which sometimes increase towards noon to a fresh breeze from the south, occasioning a long swell on the Arabian coast. Towards the middle of the month, and in July and August, between Burnt island and the strait of Bab-el-Mandeb, strong westerly and south-westerly winds may be expected, blowing through the straits with violence, and sometimes enabling a vessel bound to India to reach the monsoon; but as a general rule a vessel will lose the wind before reaching Rás Rehmat, and will not fall in with it again until it bursts from the southward through the channel between Sokótra and the mainland of Africa.

Moderate southerly winds may also be expected during these months, blowing only during the day, declining into a light air at night. In the evening, after the southerly wind dies away, severe land squalls are not unfrequent on the Arabian coast, which, rising in a thick cloud of dust, give ample warning to the seamen. There is always a long southerly swell on the Arabian coast at this season.

The wind blows out of the Red sea in a southerly direction, varying with the line of mountains on the Arabian coast; eastward of the strait it takes a westerly direction, but seldom extends far beyond 'Aden.

Near the coast of Africa, from cape Guardafui (Rás 'Aşir) to the westward, at this season, heavy land squalls are experienced from about S.S.W., and generally come off between midnight and daybreak, lasting about an hour, frequently followed by a calm, and as frequently by a westerly or west-south-westerly breeze. These land winds are always parching hot, and very disagreeable.

In September the westerly winds cease, and land and sea breezes prevail, as also in the month of October. The nights are calm and sultry.

On the east coast of Arabia, from Kōşair to Rás-al-Hadd, the S.W. monsoon sets in late in May, and ceases towards the end of August; it is much more moderate than in the other parts of the Arabian sea, the wind seldom exceeding a good fresh breeze by day, and lulling considerably at night, and the sea is not so great as that experienced in the open sea and approaching the western coast of India; the sky is generally clear, but weather hazy. Southerly winds will frequently set in early in March, and blow very fresh; these must not be mistaken for the monsoon, as they are followed at the end of the month and in April by light and variable winds along the whole line of coast. May is a doubtful month. Should the monsoon set in early it will blow fresh, otherwise moderate weather will be experienced.

The monsoon is in its full force from June until towards the latter end of August; it blows strongest, and the sea is heaviest, on that part of the coast between Rás Merbát and Masírah island, especially in the Kuriyán Muriyán bay, and particularly in the month of July. During these months the Arabs do not venture to sea; the larger boats run up the coast early in June, after the first burst of the monsoon, and also towards the latter end of August, when they consider the monsoon to be over.

In the vicinity of the Kuriyán Muriyán bay and islands, the S.W. monsoon sets in with a gale of wind, thunder, lightning, and rain.* This is the only part of the coast feared by the native navigators, there being no place of shelter to run for, except under the lee of the largest of the islands, and may be considered one of the stormiest portions of the Arabian sea.†

In the month of September the winds are moderate from the westward and southward. In October, light variable breezes and calms prevail, in-shore land and sea breezes are sometimes experienced, and occasionally, at night, a passing shower of rain. As a general rule, rain seldom falls on this coast, except in the province of Dhofár and in the gulf of 'Aden; but heavy dews may always be expected.

The atmosphere in the S.W. monsoon is generally very hazy, and the land consequently not visible till very close, rendering it necessary to pay great attention to the lead. On making the coast at the N.E. point of Africa during the S.W. monsoon, the best signs of being near the land are the gradual change in the colour of the water from blue to dark green, and the alteration in the direction of the swell, caused by the prominent Rás Hafún.

The NORTH-EAST MONSOON commences in the Arabian sea, about the middle of October, and prevails during the months of November, December, January, and February, after which the winds become light and variable, until the setting in of the other monsoon. It blows a steady

* Report by the natives.

† In May 1503, the commander of the Portuguese East India fleet was wrecked on the Kuriyán Muriyán islands during a gale. In 1853, H.M.S. *Juno* was nearly dismasted in a violent gale off the islands. The mail steamers of the Peninsular and Oriental Company were compelled to abandon the north-western passage from Bombay to 'Aden, owing to the tempestuousness of this part of the coast, although it promised a more rapid passage in June, July, and August than the southern route obliged to be taken. The P. and O. Company's steamer *Malta* suffered much during a violent gale south of Kuriyán Muriyán bay. The E. I. Co.'s steamer *Queen* was nearly lost in the middle of April 1855.

moderate breeze from the north-eastward, in the open sea, with fine settled clear weather, and a smooth sea; but on the east coast of Arabia, and the coasts within the limits of the gulf of 'Aden, the wind is very variable.

In the gulf of 'Aden the N.E. monsoon commences early in November, the prevailing winds being East and E.N.E., blowing fresh at full and change of the moon. At the end of December, or early in January it frequently blows a moderate gale with heavy rain. In January, February and March, easterly and east-north-easterly winds are common, increasing in strength towards the strait of Bab-el-Mandeb. The weather is generally clear and pleasant; thermometer ranging from 68° to 80° Fahrenheit; rain may sometimes fall, but not in any great quantity. These are the three principal months for trade.

On the east coast of Arabia, light and variable winds are experienced during the month of October. In November, between the island of Masirah and Rás-al-Hadd, light land winds of short duration, and sea breezes from S.E. to South, generally prevail; but to the southward and westward of Masirah, land winds are rare. A strong breeze from N.E., with a short chopping sea, is by no means unusual during this month and early in December, and is always looked for by the native navigators.

During the months of December, January, February, and part of March, the N.E. monsoon blows along the whole line of coast, varying with the direction of the coast line. At a distance from the coast it blows from N.E. to E. by S., with clear pleasant weather, and free from squalls and rain; but near the coast the atmosphere is generally hazy, particularly when land winds are blowing. Fogs are also prevalent in the vicinity of Ghubbet Hashish and the gulf of Masirah.

Strong land winds, called by the natives Belát, may be expected from the middle of December till the middle of March, between Rás Seger and the island of Masirah; they blow from North to N.N.W., and last from one to three days, and at times even as long as seven days. Indication of their approach is generally given by a faint hazy arch over the land the previous evening, or by the wind veering towards the land, sometimes in sudden gusts, early in the night. They nearly always set in between midnight and 4h. a.m., commencing with a light breeze, and increasing to a moderate gale in about an hour, blowing hardest between 9 p.m. and 9 a.m., and usually cease about noon, as suddenly as they commenced.

They are very dangerous to vessels that may happen to be close in-shore, where they will occasionally, during the night, die away to a calm, and remain so about an hour, when heavy gusts will blow down from the mountains, at intervals of a few minutes, succeeding each other for five or six hours. These gusts give no warning, except the noise they make

passing over the water, and if not prepared for them, are sufficiently strong to carry away a vessel's masts.*

Off shore, a high sea is raised by these winds. In some years, they may seldom occur, while in others they are frequent and very violent.

Beláts are frequently succeeded by strong south-easterly winds, which bring with them a very considerable swell.

The winds and weather in the bay of Kuriyán Muriyán, appear to be more boisterous and variable than on any other part of the coast; the beláts are more furious,† and gales from S.S.W. are common during the months of February and March; the changes of wind are sudden, and give little or no warning. The atmosphere is always hazy during the beláts.

About Masírah south-easterly winds are more prevalent than any others in these months, varied occasionally with a moderate north-easter. Fresh southerly breezes, of two or three days duration, may be experienced occasionally in the gulf of Masírah.

From the middle of March till the end of April, the winds are light and variable along the whole coast; land and sea breezes are felt in-shore. To the northward, about the gulf of Masírah to Rás-al-Hadd, north-easterly winds become lighter, and S.E. and S.W. winds more frequent.

Too much confidence must not be placed in the above remarks, for although the winds most likely to be met with are therein laid down, experience proves that the seasons are anything but regular, frequently in the same month in different years, totally opposite winds may be experienced. Captain Haines remarks‡ that during his experience on this coast, extending over a period of several years, he observed that at all seasons, on all parts of the coast, particularly where the land is low, the wind is influenced more or less by the sun's position, and the change in the state of the atmosphere towards the sea, and even in strong breezes the same influence prevails to a certain degree.

The TEMPERATURE of the atmosphere in the gulf of 'Aden varies with the prevailing winds; the following is the average range of the thermometer throughout the year.

January, February, and March.—Weather generally clear. Thermometer ranges 68° to 80° Fahrenheit.

* During the occupation of the large Kuriyán Muriyán island (Hulláníyáñ) by the Red sea and India Telegraph Company, one of these beláts blew violently there for a period of twenty-one days.

† On the 19th December 1834, the *Reliance* whaler was wrecked on the Kuriyán Muriyán islands during a furious belát from W.N.W. From the remains found by Captain Haines of the Indian Navy, who surveyed the bay and islands in 1834-35, wrecks must have been very frequent.

‡ Journal of the Royal Geographical Society, vol. xv., 149.

April.—The weather becomes warmer. Thermometer 80° to 86° .

May.—Owing to light winds and calms, it is frequently intolerably hot. Thermometer 84° to 95° .

June.—During a westerly wind the temperature is considerably lower and the change on leaving the Red sea surprising.

July and August.—Thermometer ranges from 77° to 87° .

September.—The weather again becomes warm, owing to the cessation of westerly winds. Thermometer ranges from 84° to 96° .

October.—Towards the end of this month the nights become cooler, and at sunrise the thermometer will sometimes stand as low as 78° .

November and December.—From the commencement of November to the end of the year, the weather gradually becomes cooler as the N.E. monsoon increases. Thermometer ranging between 76° and 84° .

During the S.W. monsoon on the African coast the heat is insufferable, especially when a land wind is blowing, at which time the thermometer will sometimes rise to 110° Fahrenheit. The natives always leave the coast at this season for the mountains to escape the heat, and there is consequently a total cessation of all trade.

On the east coast of Arabia to the north of Merbát, the weather is more pleasant than in the gulf of 'Aden, and during the months of December, January, and February, it is even cold at night.

GALES.—No gales of any strength are likely to be experienced on the east coast of Arabia or in the gulf of 'Aden, beyond those mentioned in the remarks on the monsoons.*

HURRICANES or CYCLONES.—These dangerous revolving tempests are happily of rare occurrence in the Arabian sea, those of which there is any record have been chiefly confined to the western coast of India; there are however a few exceptions, namely, that of October 1842, which traversed across the sea, but was not felt within 180 miles of the Arabian coast.

In April 1847, a furious cyclone occurred on the western coast of India, sweeping the whole coast as far north as Bombay, and causing a considerable amount of damage to shipping. At the same time, or within two

* On June 8th, 9th, and 10th, 1836, the E. I. Co.'s sloop of war *Ternate* experienced a heavy gale, when 180 miles E. by N. of Rás-al-Hadd, was partially dismasted, and threw her guns overboard. In April 1856, the P. and O. Co.'s steamer *Malta* and the ship *Haddington*, suffered much during a violent hurricane south of Kuriyán Muriyán bay, and the E. I. Co.'s steamer *Queen* was nearly lost at the same time. On 3rd May 1859, and 26th October 1860, 'Aden was visited by tremendous rain storms, probably the tail of cyclones passing over Southern India. On June 3rd, 1859, the ship *Typhoon*, on her passage from 'Aden to Bombay, experienced a severe gale in lat. $15^{\circ} 30'$ N., long, 66° E.

days of its passing over Bombay, Maskat was visited by a similar tempest of a very violent nature, partaking of all the features of a cyclone; it caused great damage to the shipping in the cove, driving several vessels on the rocks; the town also suffered severely, the streets were flooded by the rain, which fell in torrents; trees were uprooted and washed away into the sea, and a large number of cattle were drowned. There is no proof of this being the same tempest as that on the coast of India, no report having been received of its being felt by any vessel in its course across the sea, but it is evident that it did not extend beyond Maskat, as a vessel only 60 or 70 miles to the north-westward had a light breeze at the time.

This is the only cyclone on the N.E. coast of Arabia of which there is any record; it gave no warning of its approach, beyond the clouds being tinged with red at sunset and a closeness in the atmosphere, nor did the barometer fall to any great extent, either before or during the period of its existence, which was only 6 hours.

These tempests are the more dangerous from the difficulty in prognosticating their approach, which can seldom be done with any degree of certainty; the usual signs of stormy weather should, however, never be neglected, especially at those seasons they are most likely to be experienced, which is about the change of the monsoons. There is now less danger in meeting them, it having been found that they are governed by a general law, and consequently their centres can be avoided, and a vessel's safety insured, provided there is sufficient sea room, or a convenient harbour near for shelter; they may even be made useful in furthering a vessel on her course, if the navigator knows on what quarter of the storm he is.*

CURRENTS in SOUTH-WEST MONSOON.—The currents in the Arabian sea at this season are regular in direction, their velocity depending much on the force of wind and local circumstances. The general course of the current in the middle of the sea is about East, inclining to S.E. as it nears the western coast of India: its velocity varies from half a mile to 2 miles per hour.

On the eastern coast of Africa the current sets along the coast to the N.N.E. at a velocity of 2 to 4 miles per hour, passes through the channel between Sokotra and the north-east point of Africa, at a rate of one to 3 miles per hour, and pursues thence a north-easterly course until it joins the current setting out of the gulf of 'Aden.

* See Remarks on Revolving Storms, published by order of the Lords Commissioners of the Admiralty, 1875; The Law of Storms, by Colonel Sir William Reid; by Mr. W. C. Redfield; and the Horn Book of Storms, by H. Piddington, Esq., 1848; also the Law of Storms, by H. W. Dove, F.R.S., 1862; and remarks in Admiralty Wind and Current charts, 1879.

At cape Guardafui a branch of the current sets close round the cape to the westward along the African coast at a rate of about $1\frac{1}{2}$ miles per hour, to near the meridian of 'Aden,* where it turns to the northward and unites with the current which, during this monsoon, sets out through the strait of Bab-el-Mandeb, and follows along the coast of Arabia as far as Rás-al-Hadd, with a velocity of three-quarters to 2 miles per hour.

To the south of Sokótra, at a distance of about 150 miles, is a great whirl of current, caused possibly by the interposition of the island; or, it may be, that shoal water exists at that spot; it commences about the parallel of Rás Hafún, when the current strikes off to the eastward to the 55th meridian, then to the southward, to the 5th parallel, whence it again curves up to the north-eastward, forming a complete whirl. At the northern limit the velocity is very great, being 4 to 5 miles per hour, while at its southern extreme it is only three-quarters to one mile per hour. A very heavy confused sea is created by this whirl. Care should be taken to avoid the strongest portion of the current in making the coast of Africa from the eastward, by keeping well to the southward.†

Little is known of the currents at this season close to the northward of Sokótra. Horsburgh remarks that the currents on the north side run with the prevailing breezes to the north-eastward, but, when the wind moderates, an almost equally strong current runs in the opposite direction. This most probably applies to within a few miles of the land. See page 21.

Throughout the S.W. monsoon, or from June to September inclusive, the water runs out of the Red sea, while from November to May the contrary is the case. In the strait of Bab-el-Mandeb these currents have a rate of 40 miles a day. At the change of the monsoons there is little or no current. In the strait an irregular tidal influence is felt. The velocity of the current throughout the gulf varies from half a mile to 2 miles per hour.

CURRENTS in NORTH-EAST MONSOON.—The current in the Arabian sea generally sets to the south-westward, its velocity depending on the force of the wind. When the wind is light there is little or no current.

On the east coast of Arabia, between Rás Jezírat and Rás-al-Hadd, the current sets to the south-westward with a velocity of a half to three-quarters of a mile per hour.

* H.M.S. *Rifleman*, when proceeding from cape Guardafui to Burnt island, rounded the cape at noon on 10th May 1875, very close to, and found the current setting strong to the westward. In the afternoon, at 30 miles from the land, there was no current, but on closing the African shore the next morning to a distance of 2 miles the current again set to the westward at a rate of 4 to 5 miles an hour.—Remark Book of Navigating Sub-Lieutenant F. Roberts, H.M.S. *Rifleman*.

† Lieut. Taylor, I.N.

Considerable time and attention have been paid to the currents in the gulf of 'Aden, and the general conclusion arrived at is, that they are set in motion by the prevailing winds, increasing and decreasing in velocity in the same ratio as the force of the wind, and influenced in some degree by the moon's age and consequent change of the tides, which are very irregular. This latter remark only applies to the coast current.

During the N.E. monsoon the general set of the current in the gulf of 'Aden is to the westward at a rate of from three-quarters of a mile to $1\frac{1}{4}$ miles per hour. About the middle of the Somáli, or African coast, there appears to be a counter current which sets to the eastward at from a half to $2\frac{1}{4}$ miles an hour.

In the centre of the gulf the currents seem to set in all directions in large whirls or circles, except when the wind is blowing strong, when it will run in the same direction as the wind.

TIDES.—The tidal wave strikes the coast of Arabia nearly at the same period, it being high water on full and change from 9h. to 10h.; but at Perím in the strait of Bab-el-Mandeb, it is 2 hours later, or at noon. The time of high water is, however, very irregular, varying as much as an hour. The rise and fall increases to the northward, about the gulf and island of Masírah, being 6 to 7 feet between Perím and the Kuriyán Muriyán islands, increasing to 10 feet at Masírah. This is probably owing to the obstruction caused to the wave by the island and the several banks in the gulf of Masírah.

The tides are irregular and weak, and are frequently entirely overcome by the current. The flood in the gulf of 'Aden, and as far eastward as Merbát, sets to the southward and westward, following the direction of the coast; from Merbát to Rás-al-Hadd the flood sets to the north-eastward.

Instructions for taking advantage of the tides are given elsewhere in the body of the work. As a general rule they are weak and irregular, and of little assistance to a vessel in working against the wind, the current occasioned by the wind overcoming them.

The Sea on these coasts is remarkable for its occasional peculiar brilliancy at night; without any warning it will become suddenly illuminated, as if on fire, causing alarm to the stranger who may be unacquainted with the phenomenon, by giving him the idea of his vessel being amongst breakers, but on casting the lead the deception becomes apparent. It occurs in the open sea as well as near the land, and whether calm or with a breeze.

GENERAL REMARKS ON MAKING PASSAGES TO AND FROM THE RED SEA.

INDIA to the RED SEA.—A vessel bound from Bombay, or any other port on the western coast of India, from November to the end of February, should steer a direct course to pass between the Arabian coast and the island of Sokótra, and afterwards to fall in with the coast about 'Aden, paying attention to the lead. In these months the N.E. monsoon blows strong, especially to the westward of Sokótra, and a speedy voyage may be anticipated.

In March and April the winds are less constant in the Arabian sea than in the four preceding months, and calm at times. In these months a vessel should steer to pass to the southward of Sokótra; for early in April the N.E. monsoon is nearly expended about this island, and on the coast of Arabia, and is succeeded by light breezes from the south-west and westward, with frequent calms. The current also begins to set strong to the northward about Sokótra, and between it and the coast of Africa. It is therefore advisable, about and from the latter end of March, to pass about 50 miles to the south of that island, to be enabled to reach Rás 'Aşır with the south-westerly winds, which may then be expected.

Leaving Bombay late in April, a vessel should shape a course to pass well to the southward of Sokótra, to enable her to make the coast of Africa to the south of Rás 'Aşır with the south-westerly wind, which she will probably meet with long before that coast is approached. The coast may be made anywhere between Rás Hafún and cape Guardafui (Rás 'Aşır); the deep bay to the S.W. of the former cape should be avoided, as the danger is great if a vessel get into the bay with strong winds, or during the night.

Caution.—As many large and valuable vessels have from time to time been wrecked with loss of life on the coast to the southward of cape Guardafui or Rás Aşır, when bound round this headland from the south-eastward, seamen should use the utmost caution not only in making the land, but also in verifying the vessel's position by soundings, more especially at night, or during the south-west monsoon when the weather is hazy.

As soundings extend from 10 to 12 miles from the coast, the deep sea lead should be frequently used, and the vessel's course altered to N. by E. or N. by E. $\frac{1}{2}$ E., or if necessary more to the eastward, immediately soundings are struck, or the land sighted in dark or hazy weather. By steering to the northward as above and by not standing into less than 35 fathoms water, the vessel's safety will be ensured, and as the water rapidly deepens northward of the parallel of the cape, the 100-fathoms line of soundings being only $2\frac{1}{2}$ miles from it, there will be no difficulty as to the time

when the course should be again altered to the W.N.W. During day a gradual change will probably be seen in the colour of the water from blue to dark green. Attention should also be paid to the alteration in the direction of the swell caused by the promontory of Rás Hafún.

Having made the land, it is advisable to round Rás 'Aşır quite close, to avoid being set to the northward, away from the coast; the current running across the entrance to the gulf, and not round the cape, except close in to the coast. A vessel should keep the African coast close on board until off Burnt island, when a course may be shaped direct for the coast of Arabia about 'Aden; and if bound to the Red sea, work along the Arabian coast towards the strait of Bab-el-Mandeb.

It is useless to attempt the direct passage from Bombay to the gulf of 'Aden during the S.W. monsoon months, or from early June to the end of August. There is no record of any vessel having succeeded, though some have tried it. The East India Company's steamer *Akbar* attempted the direct passage in June 1846, but was obliged to bear up for Bombay with her cutwater damaged. The East India Company's steamer *Feroze* tried it in July 1849, but finding the wind and sea increase as she advanced to the westward, so as to require four men at the helm, and the decks being constantly flooded, after 4 days she bore up to the southward and made the southern passage.

It is usual after the setting in of the S.W. monsoon for sailing vessels bound from Bombay to 'Aden and the Red sea, to make what is called the SOUTHERN PASSAGE, or to run down south of the equator into the S.E. trade to make their westing. After working out of Bombay harbour into 15 or 20 fathoms of water, a vessel may steer down the coast, keeping in soundings of from 40 to 50 fathoms; this is advisable to prevent running on to the easternmost of the Lakadive group of islands, as owing to the thick, overcast, rainy weather that may be expected, observations may not be obtainable for days together. After passing these islands, as little easting as possible should be made, as the S.E. trade is fallen in with sooner to the westward than to the eastward. The wind will be from S.W. to W.S.W. with hard westerly and west-north-westerly squalls accompanied by heavy rain. A current to the south-south-eastward of from 20 to 30 miles a day will be experienced.

As the equator is approached, the weather will be finer, and the wind more moderate; and on the equator, light airs and calms, with cloudy weather, and possibly rain will be experienced. This weather will continue until the S.E. trade is fallen in with, which is generally in from 5° to 6° S. latitude, but it varies; it is sometimes met in 1° S. at others not north of 8° S. or even 9° S. latitude. A vessel may run down her westing

as soon as she is fairly in the trade wind, but generally vessels are obliged to pass to the southward of the Chagos archipelago.

On getting the S.E. trade, a course should be shaped for the Seychelle islands, one of which may be sighted, for a fresh departure. The equator should be re-crossed on the meridian of 53° or 54° E. The trade wind will be steady and strong with fine weather, and carried as far as the equator, gradually veering to South and S.W. continuing moderate till in about 4° N., when the S.W. monsoon will increase and reach its greatest force in about 10° N.

After crossing the equator, a course should be shaped to make the African coast between Rás Hafún and Rás 'Aşir, due allowance being made for the strong north-easterly current which will be experienced on nearing the coast, and Rás 'Aşir must be rounded close, to prevent being set to the northward. As before stated, vessels should keep close to the African coast until Burnt island is reached, when they should steer for 'Aden. It is sometimes tedious beating along the African coast when westerly and west-south-westerly winds blow strong, but a vessel should persevere, as she is more likely to get to the westward than in the middle of the gulf, or on the Arabian coast.

Vessels should have good sails bent, for the wind frequently blows in severe gusts along the African coast.

A ship that sails well may work up from 'Aden to the strait of Bab-el-Mandeb, during the S.W. monsoon, if every advantage is taken, particularly on the springs, when the current is liable to change and set to the westward; the wind at such times is also subject to small changes: or in these months a quicker passage may sometimes be made, by keeping near the African coast till about 60 or 70 miles to the westward of Burnt island and then crossing over for the strait, or as near to them as the wind will admit.

The best track for steamers from Bombay to 'Aden during the months of June, July, and August, is that laid down in Lieut. Taylor's Wind and Current chart.* A course between S.S.W. and S. by W. $\frac{1}{2}$ W. from Bombay, may be made under steam, and fore and aft sails,† until the 9th parallel is reached, when the wind becomes light and the water smooth, and by steam alone the westing can be made, till near the 61st or 62nd meridian and 7th parallel, the vessel may then be eased off to the north-

* See chart, Arabian sea, showing the winds and currents in S.W. monsoon, No. 9; scale, $m = 0.03$ of an inch.

† Almost all the rain squalls on the Malabar coast, and for 200 miles from the land, come from the northward of W., and frequently from N.W., being a great help to steamers in making their southing under fore and aft sails.—*Lieut. Taylor's Memoir.*

westward under fore and aft sails, and when within half a day's run of Rás 'Asír she may be able to set reefed square sails. Care should be taken to avoid the strongest portion of the whirling current south of Sokótra, by not going to the north of the 10th parallel on the 53rd meridian, and allowance must be made for the north-easterly set near the coast. Caution is requisite in making the land north of Rás Hafún in the night; *see* page 10. The water gets smoother, and the swell alters its direction to the eastward of south when the meridian of that cape is passed. As before remarked, the atmosphere near the north-east point of Africa is generally hazy, and the land consequently not visible till close, sometimes within 20 miles; the best signs of being near the land are the change in the colour of the water during daytime from blue to dark green, and the alteration in the direction of the swell caused by the prominent Rás Hafún.

Vessels bound to the Red sea from Cochin, Calicut, or other ports on the southern part of the Malabar coast, in November, December, January, and February, may steer directly to the westward through the most convenient channel among the Lakadive islands. Vessels from Cochin should pass to the southward of Seheuli-par, keeping in about $9^{\circ} 30'$ N. latitude; but vessels from Mangalore or Cannanore should pass to the northward of all the islands. In March and April the prevailing winds between the Malabar and African coasts being North to N.W., it is better to keep near the coast till north of mount Dilly, and pass to the north of the islands; or if the Nine Degrees channel is adopted, vessels should pass near to the islands Kalpeni and Seheuli-par, as the current sets to the southward in these months, towards the Maldive islands.

When clear of the islands, in November, December, January, and February, a course may be shaped to pass on the north side of Sokótra; but late in March or early in April it is prudent to keep farther to the southward, in latitude 9° or 10° N., as the wind admits; and in May, when the S.W. monsoon may be expected, it is advisable to keep well to the southward.

Vessels bound from the eastern parts of India to the Red sea during the strength of the N.E. monsoon, after passing round the south side of Ceylon, should steer direct for the Nine Degrees channel, and proceed as directed for vessels sailing from Cochin.

After March, vessels from the bay of Bengal towards the Red sea should adopt the southern passage, and run down to the parallel of 9° or 10° S., passing to the southward of the Chagos archipelago.

Steam vessels bound from Malacca strait to 'Aden during the south-west monsoon will find it their interest to gain the equator as early as possible without too great sacrifice of westing; say on a S.W. course, which course

should be continued until in 1° S. Then steer W. by S. to cross the meridian of 80° E. on the parallel of 3° S. From this position steer west until the meridian of 61° E. be reached; then steer to cross the equator in 58° E., and proceed for Rás Hafún as directed at page 10. By keeping to the southward of the equator, the strength of the current is lessened, and the vessel will pass through a large extent of calm. By recrossing the equator so far west the vessel will be in a favourable position to avail herself of both wind and current in the bad weather of the south-west monsoon.

The best season for leaving the Red sea for India and the Persian gulf is from May to August or September, during the S.W. monsoon. Vessels bound to Bombay during those months, should, on leaving the strait of Bab-el-Mandeb, keep in the centre, or more on the Arabian shore of the gulf of Aden, to avoid the westerly current on the African shore; and on reaching the S.W. monsoon outside the gulf, should steer a direct course for Keneri island, to the south of Bombay.

Vessels bound to Ceylon or the bay of Bengal during those months should shape a course to pass through the Eight Degrees or Nine Degrees channel; between the Lakadive and Maldive islands.

Ships bound to the Persian gulf during those months will find the S.W. monsoon blow strong along the whole extent of coast to Rás-al-Hadd: they should keep at some distance from the shore, as the wind is liable to fall light at night near the coast.

From the month of September to the month of March, the passage from the Red sea to India or the Persian gulf is very tedious for sailing vessels, and seldom attempted, except by square-rigged vessels; these have frequently been 60 and 90 days between Aden and Bombay.

Vessels leaving the Red sea for India or the Persian gulf during these months, should work along the Arabian coast taking advantage of every shift of wind. Should the current be strong in-shore, it is better to stand out 60 or 80 miles from the land; but should the wind be light, advantage should be taken of the tides and land winds in-shore, anchoring when requisite. The current, which generally sets to the westward, will sometimes set to windward for three or four days together, about the full and change of the moon. When off Rás-al-Hadd, a vessel may stand across for Bombay, or if, as is possible, a northerly wind be met with off the Kuriyán Muriyán islands or Masírah island, a vessel may then stand across for Bombay.

A vessel from the cape of Good Hope for 'Aden or the Red sea during the S.W. monsoon months, or from March till September, should proceed through the Mozambique channel, and after crossing the line on the meridian of 47° to 48° E., steer a course to make the land between Rás

'Aşır and Rás Hafún, making due allowance for the strong north-north-easterly currents on the coast, and thence proceed as before directed for vessels from India.

During the N.E. monsoon, or from October to March, ships should not proceed through the Mozambique channel, but adopt one of the passages East of Madagascar; the equator should be crossed in about 63° E. longitude, whence a course should be shaped for Rás 'Aşır, and thence across to 'Aden, avoiding the coast of Africa within the gulf, where the current mostly runs to the eastward.

VARIATION of the COMPASS.—The variation from Rás-al-Hadd to the strait of Bab-el-Mandeb varies from $0^{\circ} 20'$ to $4^{\circ} 20'$ westerly, and is decreasing annually about $3'$ at the strait and in the gulf of 'Aden. There appears to be great local attraction on some of the mountains and hills near the coast, the needle being influenced by the metallic composition of the rock to the extent of several degrees from the magnetic meridian.

CLIMATE.—The climate may be considered generally healthy, there being no diseases peculiar to the coast. The natives of India, when on these coasts, are subject to a dropsical disease called beri-beri, which usually proves fatal in a few months: the only treatment for it appears to be a generous European diet.

GENERAL SOUNDINGS.—Wherever the land is high close to the sea, the soundings are deepest, and the rapidity with which the land shelves off, and the depth of the sea, are in proportion to the height of the adjoining cliffs; while the contrary is the case where the land is low, and continuous so for some distance inland. It may be taken as a rule, that wherever the coast is low, there the sea is shallow; and wherever it is high, it is deep.

CHAPTER II.

SOKÓTRA AND ADJACENT ISLANDS. SOMÁLI COAST :
RÁS HAFÚN TO RÁS-AL-HAMR.

VARIATION in 1882 :

Sokótra, 2° 10' West.

| Somáli coast, 3° 20' West.

SOKOTRA ISLAND* lies East and West, being $71\frac{1}{4}$ miles in length by $22\frac{1}{4}$ miles at its greatest breadth, which is a little to the eastward of Rás Bashúrí and Rás Kattání, and is $197\frac{2}{3}$ miles in circumference. Its shape is irregular : at its eastern extreme it narrows to a sharp point ; on the south side the coast, which is convex, preserves nearly an unbroken line ; but on the northern side it is broken into a succession of small bays, and the western side is similarly indented. The whole island may be described as a pile of mountains of nearly equal height, almost surrounded by a low plain, extending from their base to the margin of the sea. This plain is of irregular width, varying from 2 to 4 miles, excepting near Rás Felink and Rás Sháab, where the mountains rise up perpendicularly from the sea, and it disappears altogether. Throughout the whole extent of this belt, with the exception of those parts which are watered by the mountain streams in their progress towards the sea, and some places hereafter specified, the soil is hard, and does not in its present state appear, to any considerable degree, susceptible of cultivation. The southern side, though considerably less fertile than the northern, is yet, in the vicinity of Rás Móm tolerably productive, but to the westward it is as arid and barren as the worst parts of Arabia : there the force of the south-west monsoon has blown up the sand from the sea shore, where it is so fine as to be nearly impalpable, and formed it into a continued range of sand-hills, which extend parallel to the beach for several miles, whence it spreads over the plain, and is even in some places deposited in great quantities at a distance of 3 miles from the sea at the base of the mountains, which there form a barrier, and alone prevent it from overwhelming the natural soil of the whole island. On the northern side the plain is stony, and covered with a dwarfish bush (the metayne) about 6 feet in height, the foliage of which appears to be retained during the north-east monsoon, and gives to the space where it grows the appearance of being clothed with verdure. The high land exhibits a great

* Memoir on the island of Sokótra, by Lieut. J. R. Wellstead, Indian Navy. *Journal R. Geog. Soc.* vol. v. 194. See chart, gulf of 'Aden, No. 6a ; scale, $m=0\cdot10$ of an inch. Also Sokótra island, No. 5 ; scale, $m=0\cdot5$ of an inch.

variety of soil and surface. As a general remark, it may be observed that nothing, in the north-east monsoon, presents a stronger contrast than the eastern and western ends of the island; while the former is destitute of verdure, has scanty pasturage, and, with the exception of some places near the sea, has no water than what is retained in natural reservoirs; the latter is supplied with frequent streams, its valleys and plains afford luxuriant grass, herds of cattle are numerous, and the scenery in many places is equal to that of our own country.

Beginning with the granite range of mountains in the vicinity of Tamarída, as the most central and lofty, steep valleys may be first stated as dividing it into narrow ridges, which extend in a north-easterly and south-westerly direction. Of these, the upper range is composed of coarse, grey granite, which protrudes its spires to the height of 4,000 feet; their summits are consequently seldom free from clouds, but when the weather is clear, their appearance is broken and picturesque. The lower part of the chain is covered with the same dwarfish tree as the plains higher up, with a considerable variety of other trees, and aromatic plants; but the granite spires merely nourish a light-coloured moss, and are destitute of verdure. Connected with the granite range, and extending from North to South, a lower range is found, averaging in height about 1,900 feet, and composed of a compact cream-coloured primitive limestone. From this the hills diverge in short ranges to the sea-shore, their outline being mostly smooth, with table summits and rounded sides, except those nearest the sea, which mostly present a steep wall. The whole of the hills in the western part of the island are similar in their appearance, elevation, and construction to this range.

The island is not distinguished by any remarkable fertility of soil. The summits and sides of the greatest portion of the mountains composing the eastern part of the island, present the smooth surface of the rock entirely denuded of soil, except where the rain has worn hollows and irregularities, in which is lodged a shallow deposit of earth, and a few shrubs appear. On the summits of the hills on the northern side of the island, and against the sides of the elevated granite peaks, is a thick and luxuriant vegetation. In the plain about Tamarída, and some parts near Kadhúp, are several beautiful valleys, with a soil well adapted for the cultivation of grain, fruit, and vegetables. In the valleys through which the streams flow, not only are there extensive groves of date trees, but a broad border of beautiful turf, occasional enclosures of jowári (millet), and, though but rarely, a plantation of indigo or cotton, indicate no want of fertility in the soil. The natives, themselves, indeed, are aware of this, and speak of their own stupidity and indolence as the work of fate.

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Climate.—Though Soḳóṭra is situated only a short distance from the continent of Africa and Arabia, yet, from both monsoons blowing over a vast expanse of water, it enjoys, at least as compared with them, a remarkably temperate and cool climate. The mean daily temperature on the plain, from the middle of January to the middle of March in 1834, was found to be $70\frac{1}{2}^{\circ}$ Fahrenheit. In the south-west monsoon, from the 1st June to the 13th July, the thermometer ranged from 80° to 95° . On the mountains it is of course much cooler. It appears that frequent and heavy rains are experienced on the island, even as early as the month of March, and during the south-west monsoon the fall is very great, rendering the climate moist, but not unhealthy.

Productions.—The most important are the *aloe spicata*, or Soḳóṭrina, called in the island, *tayef*, and by the Arabs, *sūbah*; and the dragon's-blood tree. The island has been famous for the first-named plant from the earliest period; it grows spontaneously on the sides and summits of the limestone mountains, at an elevation of 500 to 3,000 feet above the level of the plains. When pure the Soḳóṭrine aloe is the purest in the world; but, owing to the careless manner in which it is gathered and packed, it contracts many impurities, and its value becomes proportionately deteriorated. The quantity exported varies very much, a much greater quantity might be procured, the hills on the west side of the island being thickly covered with plants for an extent of miles; but, owing to the indolence of the inhabitants, it is only collected when the arrival of a ship or baghalah creates a demand.

The next in importance to the aloe comes the dragon's-blood tree (*ptero carpus draco*), the gum from which (*sanguis draconis*) is collected at all seasons. Like the aloe it is usually met with on the hills, rarely at a less elevation than 800 feet, and frequently as much as 2,000 feet above the level of the sea. The gum exudes spontaneously from the tree, and not above one-tenth of the quantity which might be procured is collected; as with the aloe, this appears consequent on there being no regular demand. Dragon's blood is called by the Arabs *dum khold*, and *edah* by the Soḳóṭrians. A light-coloured gum is also procured from a tree, called in the island, *amara*, which is slightly odoriferous, but inferior to the luban of the Arabian coast.

The wood of a tree named *metayne*, or *malarah*, which abounds in every part of the island, is so hard as to answer the same purposes as *lignum vite* is applied to, such as sheaves of blocks, splicing fids, &c.

The only grain cultivated on the island is a species of millet called *dakhan*; this is preferred to any other, because it requires little attendance, and will produce a crop at any season. No dakhan is grown on

the western side of the island, but on the eastern the enclosures amidst the valleys are very numerous. It is to their date groves, next to their flocks, that the inhabitants look for their principal means of support; though, with the exception of a small one at Gollonsír and another on the western side of the granite peaks, these are confined to the eastern portion of the island. Here the borders of the numerous streams are lined with them; but notwithstanding the large quantities collected from the whole of these groves, the supply is not sufficient for the consumption of the inhabitants, and a large import takes place annually from Maskat. In the vicinity of Tamarída are some enclosures of beans, and a little tobacco is grown, sufficient for the consumption of the inhabitants.

Vast flocks of sheep and goats are found on every part of the island; the latter are, indeed, so numerous that the owners keep no account of them. Oxen are very numerous near Tamarída, and on the mountains in its vicinity; the cows are kept mostly for their milk, from which the ghí so much esteemed in Africa and Arabia is made; the natives are not, therefore, solicitous to part with them; and the prices they demand for them are proportionately high. There are a great number of asses in the island, which are permitted to stray where they please, the introduction of camels having superseded the necessity of employing them as beasts of burden.

The only wild animals known among the hills are civet cats, which are very numerous. Antelopes, hyænas, jackals, dogs, monkeys, and other animals which are common to the shores of either continent, are unknown here. On the low lands, scorpions, centipedes, and a large and venomous description of spider, called *nargub* by the Arabs, are common. Ants are very numerous, and the bite of one kind is scarcely less painful than the sting of a wasp. On the hills rats and other vermin are common. The cameleon is a native of the island.

The island is under the government of the Sultan of Keshín, on the Arabian coast, but his rule is merely nominal.* A relative of his makes an annual visit for the purpose of collecting the revenue, which, in 1833, barely exceeded in value 200 dollars.

There does not appear to be any constituted authority, either civil, military, or of any description whatever; nor is there any distinction of rank; all are respectable in proportion to their wealth in flocks and herds. Notwithstanding the singular anomaly of so great a number of people residing together without any chiefs or laws,

* A treaty was signed in 1876, by which the Sultan engaged never to cede Sokótra to any foreign power, nor to allow any settlement to be made on it without the consent of the British Government. The British assistant political agent at 'Aden usually makes an annual visit to Sokótra.

offences against the good order of society are uncommon ; theft, murder and other crimes are almost unknown. The people possess no maritime enterprise, consequently have no trading boats, but they do not appear averse to commercial pursuits. In business transactions amongst themselves, money is rarely or ever used, and certain quantities of ghí are substituted. Dollars or rupees are demanded of strangers visiting the ports. All the silver obtained in exchange for articles supplied by them is made into ornaments for their women. They have no mechanics on the island, nor is there any timber fit for ship-building purposes, so that a vessel in distress requiring repairs could receive no assistance from them.

The inhabitants of the island may be divided into two different classes—the bedouins, or those who inhabit the mountains, and the high land near the western extremity of the island, and who, there is every reason to believe, are the aborigines ; and those who reside in Tamarída, Kadhúp, Gollonsír, and the eastern end of the island, a mongrel race, the descendants of Arabs, African slaves, Portuguese, and several other nations. The whole population of the island amounted, in 1878, to about 5,000.

There is a language peculiar to the island, which is in general use by those who have permanently settled there ; but Arabic is spoken by the merchants when transacting business with the traders who visit the island in their baghalahs. The bedouins from the Arabian coast are sometimes able to make themselves well understood by the bedouins of Sokótra, but the Arabs from Maskat are quite unable to do so. The dialect of the island is not now a written language, although it appears to have been so once.

Sokótra* has no ports in which a vessel can ride in safety, protected from all winds. The island is so placed that only on opposite sides are vessels perfectly safe during the prevailing monsoon.

During north-easterly winds, Ghubbet Kúrmeh, Ghubbet Gollonsír, Ghubbet Sháab, Ghubbet Né, and Bander R'dresseh afford tolerable shelter ; which may also be found close in-shore on the south side of the island.

In north-north-easterly winds, Ghubbet Sháab is the only bay where shelter may be found on the north side of the island, all the others being a dead lee shore. At Ghubbet Né, and close in on the south side, the anchorage is good.

The natives report that the only good anchorage in the south-west monsoon is at Bander Delíshí ; by this is meant where a vessel would feel neither wind nor sea, the water being perfectly smooth, almost without a ripple, and where several vessels have rode out the monsoon. But a vessel might be sheltered from the sea in all the bays between Rás

* Unpublished memoir by Capt. S. B. Haines, I.N.

Kadarmeh and the eastern extreme of the island; these are Kúrmeh, Kadhúp, Tamarída, Delíshí, Garrieh, and Fíkeh, but would experience violent gusts of wind from the mountains and valleys. Good ground tackle would be necessary, the anchorage being on a narrow bank, and the soundings quickly deepening to the northward.

WINDS.—From November to January the prevailing wind is N.N.E., and is the most dangerous wind on the north side of the island, blowing in violent gusts for several days at a time, rendering it almost impossible for anchors to hold, the bottom being very indifferent as anchoring ground. During these months great quantities of rain fall; but this is not the case every year, as a drought has been frequently experienced on the island.

From February to May is the fine weather season when the anchorages on the northern coast are considered safe. April is the month when the trading boats from India frequently put into Bander Fíkeh for water.

In June, July, and August, the natives say it blows incessantly in hard and violent gusts on the north coast; but on the low land of Naukad the wind is more steady and less violent, with, however, a tremendous sea and surf. In these months rain falls in showers, but not equal in quantity to that which falls during the squalls of November, December, and January.

In September, October, and part of November, light land and sea breezes are experienced, towards the latter part becoming more steady from the northward.*

TIDES, CURRENTS.—The tides are very irregular, sometimes running in one direction for 16 hours: at other times only 6 hours, depending in a great measure on the strength of the winds. The flood sets to the westward on the south side, and to the eastward on the north side; the ebb sets in the opposite direction. The time of high water at the full and change varies from 7h. 20m. to 8h. 40m. in different parts: rise of springs, 6 to 8 feet. Currents round the island are principally influenced by the winds, generally setting with it, after blowing hard for any length of time. Between the Arabian coast and Sokótra, a west-south-westerly current of 40 miles per day was experienced in January, and in March an easterly one of about 30 miles.

TAMARÍDA, or HADÍBŪ, called also by the Arabs Belád-al-Súltan, being the only collection of habitations meriting the title of town, and from the Chief residing there, may be termed the capital of the island. It is prettily situated in the bottom of a deep and open bay, of the same name, about 30 miles distant from the eastern extreme of the island, and formed by Rás Hauláf to the eastward and Rás Hábak to the westward.

Captain W. S. de Kantzow, of H.M.S. *Star*, describes Tamarída as being a mere village in 1869. Tamarída appears from the sea much larger than

* This description of the winds is principally from the report of the natives.

it is; in 1880 many of the houses were in ruins. The small villages of Súk, Deshelanáta, and Harnout lie to the eastward. Three streams of water run into the sea from the hills; one near Tamarída town, one at Súk at the foot of the sand-hill, and one between them. The landing-place is off the small stream near the town, which may be known by the date palms, which its water nourishes. During the north-east monsoon, when the breeze is fresh from seaward, the little shelter afforded by the horns of the bay exposes the beach to a heavy surf, which renders landing both difficult and dangerous.

Tamarída may be known by the high craggy granite peaks of the mountain range, 3,000 to 4,000 feet high above the sea, which overhang the plain on which it is situated; or if the peaks are clouded, by Jebel Omhari, a remarkable sloping sand-hill on the east side of Tamarída bay; when seen from the distance of 10 or 12 miles bearing S.E. by E. it appears like a white cliff sloping to the southward; and by the low sandy and rocky point of Rás Hauláf. This cape may be rounded at the distance of 500 yards.

There is no danger in the bay, the soundings gradually increase from the shore to 10 fathoms at a distance of one mile, and 20 fathoms at $2\frac{1}{4}$ miles, whence it apparently deepens rapidly into no bottom. The nature of the bottom is sand and stones.

Anchorage.—The anchorage in the bay is at all times indifferent; during the south-west monsoon strong gusts of wind from the land are experienced, rendering it difficult for a vessel's anchor to hold, and a heavy swell rolls in from the westward. In the eastern part of the bay, close up to the sand-hill, is shelter from east-north-easterly winds. It is the most convenient port in the island for a vessel in want of water and supplies, which may be more easily obtained, and better than at any other. The best anchorage for a vessel visiting the port for that purpose is, with the highest square house in the town, and the highest sugar-loaf granite peak on the mountains, in one, in $8\frac{1}{2}$ or 9 fathoms water; should the peak be clouded, with the square house bearing South.*

* H.M.S. *Forste*, in April 1871, anchored off Tamarída in 10 fathoms, with Rás Hauláf E.N.E., large house S. $\frac{1}{2}$ E., Rás Hábak W.S.W. Navigating Lieut. John Phillips, R.N., remarks: Landing good, on a shingle beach close to the entrance of the westernmost of the two small streams near the town. On landing, the natives, armed with swords and spears, came to meet us in large numbers, and directed us to the town, where we were received by the chief; they seemed anxious to learn the cause of our visit, but were disposed to sell the few sheep and fowls that could be collected on the spot.

When the swell rolling on the beach at Tamarída makes the anchorage unsafe, good shelter can be obtained close under Rás Hauláf in from 6 to 5 fathoms water, from all winds east of N.E. by N., with comparatively easy landing.—Captain's Remark Book, H.M.S. *Briton*, January 1876.

Supplies.—Good water, bullocks, goats, sheep, and fish, may be procured here; also firewood. The natives are poor, but hospitable to strangers who are independent of them;* rice is an essential article to barter with them for refreshments. Good aloes, and dragon's-blood in small quantities, grapes, water-melons, pumpkins, oranges, and plantains may be procured in the months of March and April.

Rás Hábak is a small perpendicular rocky point forming the western extremity of Tamarída bay, and the eastern one of Kadhúp bay. It is a bold point, having 5 fathoms water within 500 yards of it.

GHUBBET KADHÚP is a small bay formed by Rás Hábak to the eastward, and Rás Tahal to the westward, in the centre of which are situated the villages of Kadhúp with about 50 inhabitants, and Mourí, which in May 1880 appeared to be prospering, several—including a couple of moderate-sized dhows being at anchor off it. There is a salt-water creek and marsh. A vessel might anchor here in the south-west monsoon, but not so well as in the other bays.

RÁS TAHAL is a small low sandy point, with a reef running off it 300 yards, bearing from Rás Hábak W. $\frac{1}{2}$ N. a little over $2\frac{1}{2}$ miles.

RÁS KÚRMEH is a low sandy point, forming the eastern extremity of Kúrmeh bay. A reef projects off it about 300 yards, continuing to the eastward as far as Rás Tahal. This reef considerably increases the shelter afforded by the cape, which is superior to the shelter in Tamarída bay.† The best anchorage will be found in 5 or 6 fathoms water, a little more than half a mile from the shore, with the point bearing N.E. by E., distant $1\frac{1}{2}$ miles. In the south-west monsoon it is as open as Tamarída bay to the heavy westerly swell which is so severely felt when the coast is at all open to that point.

GHUBBET KÚRMEH is a large bay formed by Rás Kúrmeh to the eastward, and Rás Kadármeh to the westward, being $13\frac{1}{2}$ miles wide, by $3\frac{1}{2}$ miles in depth. The shore is low and sandy, but about 6 miles inland a chain of mountains surround it, with an opening near the centre, through which the natives travel across the island. To the southward of Rás Kadármeh is another pass leading to the valley of Gollonsír. Straggling huts are scattered along the shores of the bay, the inhabitants of

* In June 1872, the S.S. *Isa* was wrecked on the north side of Sokótra; the captain and crew were badly treated by the sheik and natives at Tamarída, and but for the timely arrival of H.M.S. *Briton*, they would probably have been starved to death, or carried captive to the coast of Arabia.

† During a gale from the N.E. the *Derieh Daulat* patamar slipped from Tamarída bay, and anchored in that of Kúrmeh; the difference of shelter was very trifling, and she was wrecked.—*Unpublished memoir by Lieut. H. A. Ormsby, I.N.*

which possess numerous sheep and bullocks, all of which are cheaper than at Tamarída. Close to the shore of the bay, 6 miles westward of Rás Kúrmeh, is a salt-water swamp, with its entrance completely filled up, called Khór Hadjún ; it extends about three-quarters of a mile inland, and is bounded by moderately high cliffs.

The soundings in the bay are regular, the 10 fathoms line being nearly $1\frac{1}{4}$ miles from the shore, increasing to 38 fathoms at $4\frac{1}{2}$ miles distance, beyond which no soundings have been taken. Off Rás Kadármeh the bank of soundings appears to extend off shore only $3\frac{1}{2}$ miles. The nature of the bottom in the bay is sand and choral in-shore, and sand and shells in the offing. During the north-east monsoon there is considerable swell towards the western part of the bay.

RÁS KADÁRMEH is a low point terminating from a high buff close to it, from which the coast runs about W. $\frac{1}{2}$ N. $4\frac{1}{2}$ miles to Rás Bashúrí. Off the latter point is a remarkable pyramidal rock, of about 150 feet elevation, joined to it by a narrow neck of land 50 yards in length. Between the two points, the soundings are deep close to the shore, and at a distance of 3 to 4 miles none are found at a depth of 140 fathoms. From the pyramidal rock off Rás Bashúrí, the soundings begin again to extend a considerable way from the shore.

Rás Bashúrí and the coast to the westward as far as Rás Samárí, a distance of 2 miles, is the most northern part of the island. The mountains, nearly 2,000 feet above the sea, rise in some places almost perpendicularly from the coast, with a rocky beach along the shore. Between the two points a part of the mountain side is covered with sand.

RÁS GOLLONSÍR is a small point about 2 miles W.S.W. from Rás Samárí, with four small granite peaks on it, by which it may always be known, as well as by the hills near them being covered in some places with sand. It forms the N.E. point of Gollonsír bay. Between Rás Gollonsír and Rás Samárí the shore is fronted by a shoal, dry in some parts at low water, with mangroves, and extending midway between the capes one mile from the shore ; near its edge are some shallow patches, of 2 fathoms water, to which the soundings decrease gradually.

GHUBBET GOLLONSÍR is a bay affording shelter in the north-east monsoon, formed by Rás Gollonsir to the eastward, and by the bluff point Rás Bedú to the westward. The village and mosque are situated in a grove of date and cocoa-nut trees, close to a lake of fresh water, about three-quarters of a mile South of the cape. In 1834 it contained 130 inhabitants ; there are, however, some scattered huts near the grove of Haiyú, which probably contain 40 or 50 more.

The soundings in the bay under 10 fathoms are irregular with overfalls ; and W. $\frac{1}{2}$ N. of the village, three-quarters of a mile from the shore,

is a small patch of $2\frac{1}{2}$ fathoms. The 10 fathoms line is from three quarters to one mile distant from the shore. From 20 fathoms the soundings suddenly deepen into no ground at 100 fathoms. The shore of the bay is fronted by a rocky reef, extending off a quarter of a mile.

Supplies.*—Good water and firewood are plentiful; also milk, sheep, and goats, if a few hours notice is given to get them from the interior. A few fowls, beans, and pumpkins are procurable. There is good fishing to be had. The natives will take water off in their own boats, of which they possess a small number, but ships must supply casks.

ANCHORAGE.†—The best anchorage is off the sandy beach, or best landing-place, distant 800 yards, in 4 fathoms, low water, with the Northern granite peak on Rás Gollonsír bearing N.E. by E., and the mosque S.E. by $\frac{1}{4}$ E. The bay affords no shelter in the south-west monsoon.

TIDES.—It is high water full and change at Gollonsír bay at 7h. 20m.; rise of springs, 8 feet. Flood sets to the eastward.

RÁS BEDÚ is a bluff point about 300 feet high, being the termination of the Jebel Máli mountains. It forms the north-eastern point of Bander or Ghubbet Sháab, and the coast from it takes a sudden turn south. To the northward of the cape there are no soundings at 170 fathoms at a distance of one mile; but to the westward are 20 to 34 fathoms for nearly 5 miles, with a rocky bottom, which affords good fish.

GHUBBET SHÁAB, or Bander Sháab, is a fine bay, 7 miles broad by $3\frac{1}{4}$ miles deep, formed between Rás Bedú and Rás Sháab, affording good shelter in the north-east monsoon, but completely open to the S.W. During the north-east monsoon the water in the bay is perfectly smooth; but at the phases of the moon strong gusts are sometimes experienced, raising the water as a whirlwind to the height of 10 feet, rendering boat sailing dangerous, and in a ship under sail requiring great caution.

There is no known danger in the bay a quarter of a mile from the shore: the 10-fathoms line is two-thirds of a mile off shore at the eastern side of the bay, increasing to $1\frac{1}{2}$ miles at the western side. The depths increase to 35 fathoms at a distance of 7 miles from the bottom of the bay, whence it rapidly deepens off the bank to no bottom at 100 fathoms. The nature of the ground is sand and rock.

The population of the bay amounted in 1834 to about 150 persons, who live in caverns or natural excavations, and in a village called Marthain Gibús, where there is some good water, obtained from wells. The natives

* In February, turtle of about 30 to 40 lbs. were cheap, and wild fowl were found close to the lake. Navg. Lieut. R. J. Rogers, H.M.S. *Seagull*, 1880.

† H.M.S. *Lynx* in April 1871, anchored in 7 fathoms, with Rás Gollonsír E. by S. $\frac{3}{4}$ of a mile distant, and Rás Bedú S.W. by W. $\frac{1}{3}$ W.

subsist by their flocks, and the small quantity of fish they catch on the coast; they are poor, but apparently contented with their lot. In March 1876, the bay when visited by H.M.S. *Briton* was deserted.

ANCHORAGE.—The best anchorage is in 10 fathoms water, with Rás Bedú bearing N. $\frac{3}{4}$ E., and Rás Sháab S.W. by W. $\frac{3}{4}$ W., off some mangrove trees, close to which is a lagoon of salt water, which rises and falls with the tide, although it has no perceptible communication with the sea, being separated from it by a bank of sand nearly 400 yards wide; it extends inland, with mangrove trees on its banks, for nearly a mile. The best mark for this anchorage is two remarkable hills like ears, the north-western one pointed, the other as if falling in an opposite direction, situated on Jebel Sháab, about $2\frac{3}{4}$ miles from the cape. They are 1,488 feet above the level of the sea, and can be seen on the south-west side of the island. With these bearing S.W. by S. good anchorage will be found, over a clear, white, sandy bottom, about three-quarters of a mile off shore, with smooth water during north-easterly winds.

JEZÍRAT SABOYNEA is a small rocky islet 160 feet high, and composed of granite, forming in three peaks, one of which is about 80 yards distant from the others. It is nearly 800 yards long, by 150 yards broad, and may be seen, from an elevation of 14 feet, about 25 to 30 miles, at which distance it resembles two ships under sail, being white, and of considerable height. It bears from Gollonsír mosque W. $\frac{1}{2}$ S. 18 miles, and from Rás-Sháab N.W. $\frac{1}{2}$ W. westerly, distant 9 miles, between which there is no danger, there being in mid-channel no bottom at 130 fathoms; but within half to three-quarters of a mile of the rock there are from 25 to 30 fathoms water. The rock being so small affords but little shelter.

RÁS SHÁAB, the western point of the island, is a fine bold cape, being the termination of a high mountain. A reef extends off it about 300 yards, and the soundings increase gradually from 14 fathoms at half a mile distance, to the edge of the bank, 6 miles from the shore. From the cape the coast extends to the south-eastward, nearly in a straight line, for a distance of 10 miles, terminating at a sand-hill, where it forms a small bay, in which is a small village. The soundings along this part of the coast are in general sand and rock, without danger, having, however, a $6\frac{1}{2}$ fathoms bank, extending parallel to the coast, for nearly the whole distance, and about one mile from the shore, with 8 or 9 fathoms water inside, and the same depths immediately outside of it; its width is not more than half a mile, with regular soundings of 20 to 25 fathoms about 5 or 6 miles off shore, outside of which the soundings are deeper, but irregular.

From this sandy bay to Rás Kattání the coast is rocky and precipitous, and forms several small points and bays, having 4, 5, and 6 fathoms water a few yards from it.

GHUBBET NÉ, or Bander Né, is the name given to that part of the coast between Rás Sháab and Rás Kattání, but more especially to the small bay near the sand-hill before mentioned, and inside the $6\frac{1}{2}$ fathoms bank, where good shelter is to be found during the north-east monsoon. The coast is thinly inhabited by people living chiefly in excavations in the rocks.

TIDES.—The ebb along the south side of Sokótra sets S.E. one mile per hour. It is high water, full and change, at 7h., but is very irregular; springs rise 7 feet.

RÁS KATTÁNÍ is an even, bold, perpendicular cape, elevated 1,465 feet above the sea. It has the same aspect whether viewed from East or West.

JEBEL KUÍREH.—A chain of mountains of nearly the same height, called Jebel Kúíreh, extends from Rás Kattání 5 miles in an easterly direction. From Jebel Kúíreh, the same chain of mountains, but with different names, continues nearly to the east end of the island, being merely separated by a few mountain passes, by which the inhabitants travel on foot across the island to Tamarída, but their camels are obliged to travel round by the plain. The mountains generally rise perpendicularly, like a wall, from the plain between them and the sea, which is from 2 to 4 miles broad, and called by the natives Naukad. This plain affords excellent pasture for sheep and goats, of which there are great numbers. The natives of the plain are few, and much scattered, some living in huts, others in excavations in the base of the mountains; they are a poor, harmless, and naturally timid race of people, and retreat to the mountains on the approach of strangers; but with caution they may be communicated with, and sheep procured from them.

Water.—The best water is supplied from the mountains, falling into natural reservoirs. There are wells on the plain, but the water is brackish, and only used for their flocks. Near the villages of Hakarí and Deairí the water is somewhat better. The best reservoir is about 9 miles to the westward of Rás Felink, close to the sea, where the low sandy beach terminates in rocky cliffs, being only separated from it by a bank of shingle. This reservoir is supplied by a fine stream running through the valley between Jebel Felink and Jebel Sharbí, called Wadí Felink. A ship in want of water, during the fine season, might procure it with ease, by anchoring close in, in 7 fathoms water, and at the same time obtain sheep, if caution is observed in communicating with the natives. In 1834 they only possessed two small fishing boats.

Soundings.—The coast is bold to approach, the soundings decreasing gradually towards the shore. The 20-fathoms line is from 4 to 12 miles off shore, decreasing in distance towards Rás Felink, and increasing between the two capes. There is no danger, although in some places there are

overfalls of 2 and 3 fathoms. The edge of the bank of soundings between Hakarí and Rás Felink appears to be from 8 to 10 miles off shore. A vessel may anchor, all along the coast, in from 9 to 12 fathoms water, over a sand and coral bottom, at the distance of about $1\frac{1}{4}$ miles from the shore.

About 29 miles from the shore, to the southward, one of the surveying vessels, during the night, crossed and recrossed a bank having only 15 fathoms water on it, the water appearing very light coloured; it was not examined, time not permitting. Another bank was reported by a native, said to be a dangerous shoal, about 6 or 7 miles off shore; but, apparently, it does not exist, a very minute examination having been made of the spot without finding it. The banks reported off shore are said by the natives to be not dangerous.

TIDES.—The ebb tide sets to the eastward, but it is very irregular, depending greatly on the winds. As a general rule, a current may be expected to set towards the point from which the wind has been blowing hard, after it moderates, particularly if it has been blowing fresh for any length of time.

RÁS FELINK is about 54 miles from Rás Kattání, and 6 miles W.S.W. of Rás R'dresseh: when seen from the westward it forms in a bluff cape, but, on a near approach, a low point is seen to project from it a little more than a mile, from which a reef of rocks, some of which are above water, extends to the S.E. about 400 yards, between which and R'dresseh the coast forms a bay; there is also a small bay to the westward, between the low and bluff points. The bluff is elevated 1,505 feet above the sea, and from it the high land continues in a north-easterly direction, to the extreme eastern point of the high land, which is 1,920 feet above the sea, from whence the land falls to a moderately elevated mountain of granite, then to several small hillocks of the same composition, thence it terminates in a low and rocky point which is Rás R'dresseh.

Rás Felink is steep and bold to approach, there being 20 fathoms water half a mile outside the outer isolated rocks, of which there are several off the low point.

BANDER R'DRESSEH is an anchorage formed to the south-westward of the cape of that name, between the low point and the three dry patches of rock which lie S.E. about one mile off it. A vessel may here anchor in 9 fathoms, in tolerably smooth water, during the north-east monsoon, with the outer small patch of rocks bearing E. by S., the low point N.E. $\frac{1}{2}$ E., and the high bluff of Móm W. $\frac{1}{2}$ N. The channel formed between the outer rocks and the reef off the low point, has depths of 6 to 9 fathoms, with overfalls. It is rather less than half a mile wide, with rapid currents which cause strong rippings; it would therefore be imprudent to pass through it, except with a strong leading wind, and in case

of emergency. At half a mile to the north-eastward there is no ground at 80 and 90 fathoms. The bank of overfalls on which the rocks lie is nearly three-quarters of a mile long, in an east-south-easterly direction, by three-quarters of a mile in width. A high sea breaks on the rocks, between which there are soundings of 5 and 6 fathoms.

RAS R'DRESSEH is the extreme low eastern point of the island, forming in two small rocky points, bearing nearly North and South of each other, distant a mile. Off each point a reef extends about 600 yards, and at a distance of $1\frac{3}{4}$ miles to the eastward and the northward there is no bottom at 120 fathoms, consequently, approaching this end of the island from either of those quarters, the lead affords no guide. To the south-eastward of the cape there are 54 fathoms water at the distance of $8\frac{1}{4}$ miles, gradually decreasing to 36 and 26 fathoms about a mile from the dry rocks before mentioned.

It was formerly supposed by navigators that the reef off the cape extended to a greater distance than it really does, which may be accounted for by the flood tide setting in opposition to a strong easterly wind, causing a strong ripple, which, to persons unaccustomed to examine the cause, would impress them with the idea that it was caused by a continuation of the reef. The same rippling is, of course, created with the ebb tide and a south-westerly breeze.

RÁS MÓM (Sokótrian), or Rás Mutláh (Arabic), cape East, is the extreme eastern, sharp, high bluff, or termination of the range of mountains running the whole length of the island, and is 1,920 feet high, being visible in clear weather at a considerable distance, when the low extreme of Rás R'dresseh 4 miles farther eastward is not visible.

BANDER FÍKEH, or Thleife, is a small bay on the north side of the island, formed between a sandy point $1\frac{1}{2}$ miles to the westward of the north point of Rás R'dresseh, from which a reef extends about half a mile, and Rás Dóm. This bay forms an anchorage, protected from easterly winds by the reef, where the small boats from India, on their pilgrimage to Jiddeh, stop to procure water, in the months of April and May.

The population of the village amounted in 1834, to 50 or 60 persons; they are a poor, timid, and inoffensive race, some living in huts, some in excavations in the hills, and subsisting on fish and the few sheep and goats they possess; when from stress of weather, or other causes, fish is not procurable, they have recourse to shell-fish.

Anchorage.—The best anchorage is with Móm bluff S.W. by W. $\frac{1}{2}$ W., the outer break of the reef N.E., and Rás Dóm W. by N. $\frac{1}{2}$ N in about 12 fathoms water. Caution is requisite in standing in for the anchorage, for unless it is blowing hard, the outer break of the reef is not

always visible; close to it are 5 fathoms water, and 400 yards off there is no ground at 60 fathoms.

In the western part of the bay the soundings are regular, decreasing gradually towards the shore, the 20-fathoms line being about $1\frac{1}{2}$ miles distant, and the edge of the bank of soundings $2\frac{1}{2}$ miles, at which distance the depth is 178 fathoms. In the centre of the bay are two double sand-hills. The shore is low and sandy, backed at a distance of half a mile by moderately elevated mountains.

Supplies.—Sheep are the same price as on the south side of the island. Milk and butter are procurable, the former being plentiful.

Water is to be obtained from a well near the village, or from a spring which rises between the two eastern sand-hills. The well is probably the best to procure water from, there being a considerable surf on the beach near the sand-hill, if the wind is at all from the northward.

RAS DÓM is a sharp, projecting rocky cape of about 250 feet elevation, bearing W. by N. $\frac{1}{2}$ N. $7\frac{1}{2}$ miles from the eastern point of Bander Fíkeh, forming only a slight projecting curvature of the coast, and therefore scarcely meriting the appellation of cape: it appears to be the boundary of the luxuriant part of the island, for to the eastward, a shrub is scarcely to be met with, except at the sand-hills above alluded to as a watering-place, where there are a few trees; but, to the westward, both hill and valley are covered with a luxuriant vegetation. Here there is a small village, inhabited by about 20 or 30 poor people, living, as others, on their flocks and fish; they are timid and civil. Sheep and bullocks may be obtained from them at the usual price.

RÁS HAMMADÁREH is a low rocky point, bearing W. by N. northerly, distant 8 miles from Rás Dóm. N.E. of the point, and half a mile distant, is a patch of rocks nearly dry, between which and the roof projecting from the shore about 300 yards, is a channel of 5 to 7 fathoms water; seaward of the patch the soundings suddenly shoal on to it.

The COAST between Rás Dóm and Rás Hammadáreh is low near the sea, with an occasional rocky point, and sand and shingle in the intervening bays, and there are three small date groves named Thuereh, Kléef, and Tumereh, with a fine fresh-water pool near the Kléef. The high land stands about 2 miles back from the beach, and is more than 1,000 feet high. There is no danger on this part of the coast, but it is not advisable to approach near, in the north-east monsoon, the bank of soundings only extending from one-third to three-quarters of a mile from it.

The coast between Rás Hammadáreh and Rás Dehammerí is low, with occasional rocky points, and sandy bays between, fronted by a narrow rocky ledge. The soundings are deep, the 20-fathoms line being about half a mile

distant from the shore, from whence the bank rapidly deepens off into no bottom at 180 fathoms.

Khór Garrieh is a small creek, situated between Rás Ham-madáreh and Rás Dehammerí, salt at the entrance, and nearly filled up at low water, so as not to admit a boat. Inland it joins a fresh-water stream which has its source several miles in the interior, with numerous date trees growing on its banks.

BANDER GARRIEH is a small bay, formed by the projecting point of Rás Dehammerí, where a vessel might anchor with the extreme point of the cape bearing N.W. by N., or N.N.W., in 6 to 10 fathoms water, from a quarter to half a mile from the shore, perfectly sheltered from the south-west monsoon.

RAS DEHAMMERÍ is a low narrow projecting neck of land, from 500 to 700 yards across, having two remarkable hillocks on it, the northern one being about 130 feet high, by which it may always be known. It bears from the extreme eastern point of Rás Hauláf, E. by S. $\frac{1}{2}$ S., distant $5\frac{1}{2}$ miles. The soundings off the cape are very deep, there being no bottom at 280 fathoms, three-quarters of a mile distant to the northward; nor are any soundings to be obtained until close to it. There is a rock near to the extreme point, and a rocky spit of $2\frac{1}{2}$ fathoms projects from a small rocky point to the S.W. of the former.

ANCHORAGE.—On each side of this cape is a small anchorage; that on the eastern side called Bander Garrieh, before described, and on the western side Bander Debení.

BANDER DEBENÍ is the small anchorage, on the western side of Rás Dehammerí, protected from easterly winds. A vessel may anchor in 3 to $3\frac{1}{2}$ fathoms water to the south-westward of the rocky spit mentioned above, with the point bearing E.N.E. There is no danger in the bay except the said spit, upon which a vessel should not edge too close. The bottom is coral rock, and the anchorage does not seem adapted for large vessels.

BANDER DELÍSHÍ is merely a continuation of Bander Debení, formed between Rás Dehammerí and a small point near Rás Hauláf, on which is a small ruined mosque or tomb. In the centre of the coast line is a sand-hill, and half a mile to the westward of it is a creek called Khór Delishí, salt and shallow at the entrance, and joined inland to a fine fresh-water stream, with date trees on its banks.

ANCHORAGE.—It has good anchorage soundings close in all along the shore, the 10-fathoms line being a half to three-quarters of a mile distant, and soundings extend farther off shore than at the points. It affords the best shelter of any of the anchorages on the coast, during the south-

west monsoon. The sand-hill bearing South or S. by E. is a good mark for the anchorage, in 7, 8, or 9 fathoms water, from a quarter to half a mile off shore. The coast from the mosque extends E.N.E. nearly 3 miles to Rás Hauláf, with very deep water close to the shore.

RÁS HAULÁF, before mentioned in describing Tamarída bay, (p. 21) is a low projecting cape, rising gradually towards the interior, and forming undulating sand-hillocks, covered with a prickly bush; facing the sea it has small rocky points, with intervening sandy beaches.

The Anchorage on the western side of the cape, though not a good one, is preferable to that off the town of Tamarída. With the wind fresh at E.N.E., a considerable swell rolls in, while off the town the sea breaks. Landing is not so difficult as in other parts of Tamarída bay.

OLIVER BANK was discovered by the E. I. Co.'s steamer *Semiramis* on her passage to 'Aden, in 1845. On sounding during the night, one cast of 17 fathoms was obtained, and immediately after no bottom. On the return voyage the vessel was steered for the spot, when the same soundings were obtained. An examination of the spot was subsequently made by Lieutenant Grieve, Indian Navy, in the *Palinurus*, without, however, finding it; it is probably, therefore, very small and its position doubtful. The position given is latitude $13^{\circ} 51' N.$; longitude $54^{\circ} 5' E.$

ISLANDS WESTWARD OF SOKÓTRA.

The BROTHERS are two islands south-west of Sokótra, and on the same plateau of soundings. Depths of 15 to 20 fathoms extend eastward of these islands for upwards of 30 miles, but this part has not been thoroughly examined. Soundings extend from the S.W. part of Sokótra to Darzí, varying from 15 to 20 fathoms, until near the latter, when they become deeper. In the channel between the two islands, which is 9 miles wide, there is no danger, the soundings varying between 20 and 25 fathoms, with a bottom of sand and shells, with occasional patches of coral.

Jezírat Darzí, the easternmost of the Brothers, is a small island 3 miles in length East and West, by one mile in width at its widest part, which is about the centre; it is 970 feet high, with an even table top the whole length of the island, rising perpendicularly from the sea, except on the northern side, where the north point of the island projects about 700 yards from the base of the hill. The eastern extreme of the island bears from Rás Sháab the western point of Sokótra, South a little westerly, distant 27 miles. On the north side of the island, a small bank extends $1\frac{1}{4}$ miles, at which distance there are 13 fathoms water, decreasing gradually to the shore, and increasing to 127 fathoms at

$4\frac{1}{2}$ miles distance, from which the edge of the bank of soundings runs to the northward towards Jezírat Saboynea. On the south side the bank of soundings extends 18 miles, depths varying from 20 to 30 fathoms to a distance of 10 miles, whence it rapidly deepens off the bank. The southern edge of the bank extends nearly due East and West.

Jezírat Samheh, the westernmost of the Brothers, bearing from Darzí W. by N., is nearly $6\frac{1}{2}$ miles in length East and West, by 3 miles in breadth at its eastern end; at its western end it narrows to a sharp point. It consists of a small hill situated near its western extreme, and a mountain, the summit of which is tabular for nearly half its length; the highest point of the mountain,—near the centre and towards the southern shore,—is elevated 2,440 feet above the level of the sea, and its northern extreme terminates in a well defined bluff. Its shores are rocky, and the south side rises in perpendicular cliffs from the sea. A reef extends half a mile off the western point, and another extends half a mile from the N.E. point, and there are two small rocky islets off the south-east side. It has water running from the mountain in small quantities all the year round; and occasionally, during the fine season, some people from Sokótra visit it for the purpose of fishing, catching turtle, and collecting ambergris. One mile and a half E. by N. from the N.E. point, is a small bank of 13 fathoms. On the south side the bank of soundings extends 17 miles; and to the westward soundings extend to Abd-al-Kúri, increasing midway to 145 fathoms, and decreasing again towards the latter island, near which the water is very deep.

ABD-AL-KÚRI is a narrow island lying midway between the west end of Sokótra and Rás 'Aşır (cape Guardafui), being 20 miles in length East and West, by nearly $3\frac{1}{2}$ miles in width at its widest part. It consists of two ranges of hills, which occupy the whole length of the island, being separated near the centre, giving it, when seen at a distance, the appearance of two islands. The eastern range is 1,670 feet above the level of the sea at its western extreme, while the western range is only 500 feet high at its highest part. The northern coast is chiefly a sandy beach, with a few rocky points; but the southern coast is composed of cliffs rising abruptly from the sea to the hills. The bank of soundings extends from one to $2\frac{3}{4}$ miles to the northward, and 4 miles to the southward of the island. The inhabitants are few, and miserably poor, subsisting chiefly on shell-fish caught in the clefts of the rocks on the sea-shore; they have no boats, and are seldom visited by strangers. The island is destitute of cultivation, and the water is very indifferent.

Rás Anjíreh, the north-eastern point of the island, is a rocky point, with a sand-hill on it, having to the southward, at the distance of one-third of a mile, a small rocky islet. Between this point and the south-east point

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of the island, which bears S. by W. $2\frac{1}{2}$ miles, and is a low rocky point to which the mountain slopes, and off which are three small rocks, is a bay with a sandy beach, in which are soundings of 6 to 10 fathoms at a distance of nearly one mile. To the north-eastward of Rás Anjیره, Bacchus bank extends for 3 miles, on which the depths vary from 3 to 12 fathoms, rapidly deepening off the bank to the northward, where the edge of the bank is only distant one-third of a mile. A strong ripple is created on this bank when the tide is setting in opposition to the wind. The width of the channel between the east end of Abd-al-Kúri and the west end of Samheh is 35 miles, in which there are no dangers except the Bacchus bank just mentioned.

From Rás Anjیره to Rás Terám, a distance of 7 miles in a westerly direction, the coast is low and sandy, and slightly concave, forming a bay called Bander Lón, in which are a few huts, and a well of indifferent water; the shore close in is fronted near the well by some sunken rocks. From Rás Terám to Rás Haimerah, a small rocky point 6 miles to the westward, the coast is formed of small rocky points with sandy beaches intervening: two miles eastward of the latter cape is a sunken rock close to the shore. From Rás Haimerah the coast runs W.N.W. 3 miles to a small rocky point, whence it again turns West 4 miles to the western extreme of the island. The anchorage along the north coast is indifferent.*

Rás Khaisat-en-naum, the western extremity of the island, forms in two sharp rocky points, bearing North and South of each other, half a mile distant. From the northern point a reef of rocks extends West one mile. This reef from Rás-Khaisat-en-naum is steep to on the north, west, and south sides; the shoalest part being considered to be in the breakers at the western extremity.

For the position of this outer breaker the following bearings and distances are given:—Rás Khaisat-en-naum, East $9\frac{1}{2}$ cables; North extreme of Abd-al-Kúri, N. 83° E. $1\frac{9}{10}$ miles; South extreme, S. 48° E. $1\frac{1}{2}$ miles; South extreme Kal Farún, N. 21° E. 13 miles. At half a mile northward of the outer breaker the depth is 25 fathoms, rapidly deepening; at this distance in a west and southerly direction the depth is not less than 35 fathoms; whilst 5 fathoms was found close to the edge of the reef in all parts.

During the survey of this locality by H.M.S. *Fawn* in May 1877, the current was observed setting to the N.N.E. at from a half to $1\frac{1}{2}$ knots the hour, and numerous tide rips were seen in the vicinity of the shoal ground.

Caution:—Off the west end of Abd-al-Kúri island, owing to the higher hills being some distance inland, it is difficult to estimate distances

* In August, 1872, H.M.S. *Briton* anchored in a bay to the westward of Rás Haimerah in 9 fathoms water, sand, and found fair anchorage with good holding ground. Rás Haimerah bore S. 44° E., and High peak (500 feet) S. 53° W. Nav. Lieut. F. Stringer.

from the shore correctly. This fact should be borne in mind, especially at night, when, to ensure passing the west end of this island at a prudent distance, of not less than 2 miles, the water should not be shoaled under 40 fathoms.*

Nine miles W.N.W. of the extremity of the island is a coral bank, with 24 to 40 fathoms water, and deep soundings of 60 to 180 fathoms all round it.

The Coast.—From Rás Khaisat-en-naum the south coast of the island trends to the E. by S. 10 miles to Bander Saleh, rising in cliffs abruptly from the sea, and forming several points, of which Rás Hattan is a projecting bluff point $2\frac{3}{4}$ miles distant. Three miles and a half from Rás Hattan is a small rocky islet close to the shore, between which is a small bay full of sunken rocks. On this portion of the coast the water is deep, there being 18 to 20 fathoms close to the cliffs, and increasing to 100 fathoms at 4 miles distance.

Bander Saleh, or Leven bay is a fine bay on the south side of the island, immediately to the westward of the extreme of the high mountain. There is very good anchorage in the bay in from 6 to 10 fathoms water, coral bottom, one quarter to half a mile from the shore, where shelter may be obtained during the north-east monsoon. There are a few huts and a well of indifferent water a short distance from the beach, but no supplies of any kind are to be procured. This is the narrowest part of the island, being only one mile across, and is formed of moderately elevated sand-hills.

From Rás Labaineh, the south-eastern point of Leven bay, the coast to the eastern extreme of the island is convex, formed of steep cliffs, with from 10 to 12 fathoms water close to them. The edge of the 100 fathoms bank of soundings is 4 miles distant from the shore.

KAL FARŪN, or Salts' White Rocks, extending N.E. and S.W. about three-quarters of a mile, by 200 or 300 yards in width, are two rocks divided by a narrow channel filled up with sunken rocks, lying 12 miles northward of the western end of Abd-al-Kúri, and situated on the northern side of a large bank of soundings 10 miles in length N.E. and S.W., by 6 miles in breadth. The eastern rock, which is the largest, has one large peak of 282 feet elevation, and two smaller ones. The western rock has also one large peak of the same elevation, and one smaller one. They form from different points of view in 2, 3, 4, and 5 peaks, and are completely covered with guano, which gives them a snow-white appearance on all sides; their only occupants are birds, which flock here in great numbers. The rocks are visible, in clear weather and during the day, about 20 miles; but at night, they are difficult to distinguish, owing to

* Commander W. J. L. Wharton, H.M.S. *Fawn*, 1877.

their colour. On the northern side the soundings only extend a short distance, increasing from 16 fathoms close to the rock, to no bottom at 100 fathoms at the distance of $1\frac{1}{2}$ miles; to the southward there are from 5 to 10 fathoms for a distance of $1\frac{1}{2}$ miles, from which they gradually increase to 25 fathoms at $4\frac{1}{2}$ miles, and thence suddenly drop off the bank into no ground at 120 fathoms. To the east and west of the rocks the edge of the bank is distant about 2 miles.

TIDES.—The flood sets North, and the ebb South, at a rate of $1\frac{1}{2}$ to $2\frac{1}{2}$ miles per hour, through all the channels between the islands. At Kal Farún it is high water, full and change, at 8h. 20m.; rise of springs, 6 feet.*

SOMALI COAST.

From Rás-al-Khyle, on the eastern coast, to Zeyla, the country is known by the name of Bar-e-Somál, and it is divided between two great nations, who, both tracing their origin from the Arab province of Hadramaut, are yet at bitter and endless feud with each other. The principal of these two great families is that to the eastward of Burnt island. The other extends from Burnt island, or Bander Jedíd, to the Essah tribe, who reside in the neighbourhood of Zeyla, and is divided into three great tribes, namely, the Haber Gerhajis, the Haber Awal, and the Haber-al-Jahleh (Haber meaning *the sons of*), who were the children of Isaakh, the said Isaakh having crossed from Hadramaut some time after his countrymen had founded the nation to the eastward, and settled at the town of Meyet, near Burnt island, where his tomb exists to this day. The eldest branch, the Haber Gerhajis, was put in possession of the frontier mountains to the southward; and the other two brothers were placed on either side of them, the Haber Awal establishing themselves on the low lands from Berbereh to Zeyla, and the Haber-al-Jahleh locating themselves at Karram, Enterád, Ankór, and Haïs, four small ports to the eastward of Berbereh. To the eastward of Meyet, as far as Bander Zíádeh, are the warlike tribe of the Wursúngeli, which name means *has brought good news*; (it is spelt in the chart Oor Singali, which is incorrect;) and thence to the eastward round Rás Jered Hafún, and down to Rás-al-Khyle, the country belongs to the numerous clans of the Mijjertheyn. These are the tribes on the coast. Although at constant war amongst themselves, they are friendly and obliging to strangers.

From Rás-al-Khyle to Berbereh, the Wádí Nogal extends in almost a straight line between two ranges of mountains. The *happy valley* is spoken of in the most glowing terms by the natives, and apparently forms their great road for trade; the people of Ogáhdén, Murreyhan, &c., bring

* H.M.S. *Star* when on her passage to cape Guardafui in April 1869, after clearing the western extreme of Abd-al-Kúri was set 40 miles to the northward in 24 hours.

all their gums, ivory, and ghí along this valley, as being the safest and least fatiguing route, and the people are described as a peaceful race, who subsist chiefly by the chase, and by their sale of ostrich feathers, myrrh, and ghí.*

In a commercial point of view, the Mijjertheyn and Wursúngeli territories are the most valuable, and a vessel of 300 or 400 tons might with ease procure a cargo of gum-arabic, luban, and myrrh, at any of the ports belonging to these tribes. Arrangements should be made with the merchants on the coast before the commencement of the foul weather—say the month of April—to have a cargo ready by the end of August; the coast is then approachable, and the gums could be shipped off at Bander Marayeh, Bander Khór, Bander Zíádeh, or Bander Ghásim, with but little delay. The name of an Englishman is much respected by the natives, and they make a marked difference between them and any other nation. Promises of all kinds were made to Lieutenant Cruttenden, of the Indian Navy, who has been much amongst them, and from whose memoirs† these remarks are taken, that they would give every facility to the English merchant who would bring his wares to them, and who could thus afford to sell them cheaper; and one or two offered to guarantee a certain supply annually, if arrangements were made in time. It would be useless, however, to send out a vessel without some person who understood the character of the people, and who could converse in Arabic with them, without the aid of an interpreter.

To the westward of the Mijjertheyn, the Wursúngeli range, 4,000 feet high affords an inexhaustible supply of frankincense, though but little gum arabic, and no myrrh. The climate in these mountains is described as most invigorating, and the country abounds in large game, the lion being very common in those parts.

Westward of the Wursúngeli, the gum trees become scarce, and though there are some parts having considerable trade throughout the year, all their gums are brought from the Dalbahantí and Ogáhden tribes. Sheep form the chief article of export from Karram westwards, and the countless flocks that are driven down almost daily, and shipped off for the Arabian coast, almost exceeds belief. Berbereh is, of course, the greatest mart at one season of the year, as all the tribes collect there; but an English vessel would do little when placed in competition with the Banyans, whose cargoes are, generally speaking, engaged the season before. It is not therefore advisable for a vessel to go to Berbereh to trade, but endeavour to be off the eastern ports as soon as the season opens; the gums are then all packed in readiness for shipment, and very trifling delay would occur.

* Clarified butter.

† Journal Royal Geog. Soc., vol. xviii. 137, vol. xix. 49.

To the westward, there are no trading ports between Berbereh and Zeyla, at which latter place a vessel would doubtless obtain a valuable cargo of coffee and mules, but probably much time would be lost. But a small quantity of gum is brought into Zeyla; coffee, dye, and ghí, with ivory in small quantities and ostrich feathers, form the articles of export. The average quantity of gums exported annually from the Somáli coast may be estimated at 1,500 tons, though occasionally, after a good season, the Mijjertheyn tribe probably export nearly that quantity. The trading season on the coast is from the early part of October to the end of March.

The city of Harrar, in the province of that name, though hardly in the Somáli country, is closely connected with it by its commerce, especially by its slave trade. It is eight days journey for a kafileh of camels from Zeyla, and nine days from Berbereh, placing it in about latitude $9^{\circ} 22' N.$, and longitude $42^{\circ} 35' E.$ The city is described as larger than Mokha, and situated in a fertile country, but is fast decaying. The coffee districts are described as lying amongst a low range of mountains near Harrar, and to the southward. The quantity exported is very large, and the quality fully equal to that commonly sold at Mokha. Besides coffee, Harrar exports white cotton cloths, the cotton of which they are made is grown at Harrar; a few silk loongis are also manufactured: cardamoms, gum, mastic, myrrh, a small quantity of manna, saffron, and safflower, with the articles above mentioned, comprise the extent of the Harrar trade, so far as regards produce; but the most valuable branch of commerce is the export of slaves. The duties levied at Harrar are 10 per cent. on import and export, and a further tax is laid on slaves of both sexes.

In the country of the Haber Gerhajis, the principal articles of trade or produce are ghí, myrrh in small quantities and of inferior quality, luban of the first quality, ivory, ostrich feathers, and gum-arabic, with a small quantity of *sheima*, or orchilla weed, and a still smaller supply of *warus*, a kind of saffron, used by the natives in Yemen to rub over their bodies.

RÁS HAFÚN, or "The Surrounded," is a peninsula or prominent headland, 8 miles broad North and South, and 12 miles long East and West, and from 400 to 600 feet in height, rising in steep cliffs from the sea, and formed of sandstone and limestone. The outer edge of the peninsula is perfectly flat and tabular, and the interior consists of undulating hills, deeply intersected by ravines, and watercourses. The south-west point of the promontory of Hafún is high and flat, like a barn, whence it is called Barn hill: at a distance it appears separated from the rest of the peninsula, the land between being low.

Rás Hafún is connected with the mainland by a long narrow neck of white sand, shells, and mud, with a few stunted bushes thinly scattered

along it, and from its being almost an island, probably takes its name of Hafún. On either side of the narrow neck of sand, is formed a deep bay with good anchorage, according to the season. The peninsula is in the Mijjertheyn territory, and tenanted by the Aial Fatha branch of the Othman family; there are only a few miserable huts, and a population of probably 50 persons; they are friendly to strangers, and may be trusted. The water in the wells is bad. Cattle and firewood are procurable.*

Hafún South Bay is, of course, best adapted for ships during the north-east monsoon, but a change of two or three points in the direction of the wind causes a swell to roll in, and a surf to break on the beach. The bay is much frequented by the shark fishers from the Arabian coast, many of whom reside here throughout the year, merely moving their fishing boats to the other side of the isthmus as the monsoon changes.

The soundings in the southern bay are regular, decreasing gradually towards the shore, being deeper to the westward than in the depth of the bay close to the peninsula, where the best anchorage is in 6 or 7 fathoms water, sand, at one to $1\frac{1}{4}$ miles from the shore, with the south-west point of the peninsula bearing about S.E. To the southward of the bay there are 27 fathoms water at a distance of 10 miles. On the south-east and east sides of the peninsula, the soundings are deeper, there being 15 to 20 fathoms water close in to the cliffs, increasing to 100 fathoms at a distance of 13 miles from the S.E. cape. The nature of the bottom is sand and rocks.

Hafún North Bay is clear of dangers, and affords anchorage during the southerly monsoon in 7 to 10 fathoms, hard sand, but the holding ground is not very good. Near the north-west extreme of the peninsula the shore must not be approached by large ships within 3 miles, as soundings of 3 and 4 fathoms extend nearly that distance from the shore.

The soundings elsewhere are regular, and increase gradually from 4 to 6 fathoms close to the shore, to 38 and 40 fathoms, 11 miles distant. The bottom is hard white sand. There is shelter in this bay from southerly winds, but it is very doubtful whether a vessel could ride in safety throughout the S.W. monsoon, owing to the heavy swell that must roll round the point, and the violent gusts of wind blowing across the head-land. These gusts of wind render it necessary to be on guard and ready to shorten sail when standing close along the cape or coming to anchor

* See chart N.E. coast of Africa, No. 100a; scale, $m = 0.25$ of an inch.

under it.* Large quantities of fish may be caught by hook and line in this bay.

Khór Hardeah, on the north side of the isthmus of Hafún, is an extensive harbour, $2\frac{1}{2}$ miles wide at its entrance, and 12 miles in depth. As an anchorage it is only available for boats, the depth of water inside being only one to $1\frac{1}{2}$ fathoms. This is probably the most unhealthy spot on the Somáli coast; its shores and the bottom of the bay are covered with decomposed vegetable matter, which, on being disturbed gives forth a noxious gas that is perfectly sickening; yet there are many fishermen living on the sea-shore, who from long habit have become accustomed to the exhalations. There is no fresh water in the bay, but it is said by the natives that at the bottom of the bay, at a place called Khór Hashera, there is a stream of fresh water running into the sea. It is possible that the river mentioned in old writers as existing in the neighbourhood of Hafún, may be this stream, and Khór Hashera the ancient Opone.

During the south-west monsoon, a kind of fair similar to that at Berberch, though smaller, is annually observed at Khór Hardeah. The merchants from Makalleh, Shehr, and from the Mijjertheyn banders to the northward and westward, attend this meeting at the end of May, when their baghalahs are hauled up on the beach; and a brisk trade is carried on throughout the south-west monsoon in gums, ostrich feathers, hides, ivory, and ghí; large quantities of ambergris are also brought for sale, and the price demanded is very great. Elephant hunting is followed by those who have guns. A good trade might be carried on between Mauritius and Hafún in asses; these might be procured at Hafún in great numbers for 5 or 6 dollars each, and the voyage being so short in the north-east monsoon, would probably afford a profitable speculation.

Caution.—Several vessels have been embayed to the south of Rás Hafún in the night, and had difficulty in beating out. Caution is therefore necessary in thick weather, or during the night. (See page 10.)

TIDES.—It is high water full and change, at Hafún, at 6h. 15m.; springs rise 4 feet.

The COAST from Rás Hafún to Rás 'Aşır, a distance of 80 miles, trends nearly north, forming two large bays, which are separated by the bluff cape, Rás Akí Besh Quail; between the latter point and Hafún the

* H.M.S. *Forte*, in May 1871, anchored in $7\frac{1}{2}$ fathoms, with N.W. cape bearing West, and dragged with 70 fathoms of cable out. H.M.S. *Nimble*, at anchor 3 cables S.S.E. from the *Forte*, also drifted, with 60 fathoms of cable out. Wind, a moderate gale from the southward.

shore of the bay is low and sandy, and thickly covered with bushes, bounded in the interior, at a distance of 3 or 4 miles, by a range of flat table hills, elevated about 700 feet above the sea, which gradually approach the sea at Rás Alí Besh Quail.

The soundings in the bay are regular, and shoal gradually towards the shore; the 10-fathoms line is 4 miles from the shore in Hafún bay, decreasing to a quarter of a mile at the northern extremity; the edge of the bank, or line of 100 fathoms, is about 12 miles distant from the coast. The general nature of the bottom is grey sand and shells.

Water.—There appears to be a plentiful supply of water in this bay. At 5 miles to the northward of the entrance to Khór Hardeah is a lagoon called Handeh, which is salt, except at the head, where it is barely drinkable. There is, however, a well of good water a few yards higher up. At Dahkabo, 8 miles North of Handeh, there is a well of good water; and 10 miles South of Rás Alí Besh Quail, in a valley formed in the table-land, there is plenty of fresh water, and the inhabitants are numerous.

Anchorage.—H.M.S. *Briton*, in September, anchored off Handeh in $5\frac{1}{2}$ fathoms, about 2 miles from the shore.

RÁS ALÍ BESH QUAIL, is a prominent bluff headland, rising in a steep cliff 400 feet above the level of the sea. The soundings off it are deep, there being 20 fathoms water one mile distant, 40 fathoms 5 miles, and 100 fathoms 11 miles.

GHUBBET BANNEH.—Between Rás Alí Besh Quail and Rás Jered Hafún the coast forms a deep bay called Ghubbet Banneh; for the first 12 miles the shore is low, sandy, and thinly covered with bushes, with a range of tabular limestone mountains in the rear, elevated 2,700 feet above the sea, descending to the plain in steep precipices, and intersected by fertile valleys. To the north-westward of this range again, and extending in a direction N.E. and S.W., is a still higher range of mountains, elevated 5,000 feet above the sea, called Jebel Goráli, which terminates on the sea at Rás Jered Hafún. On this range of mountains, 11 miles from Rás Jered Hafún, and $3\frac{1}{2}$ miles from the beach, is a quoin-shaped peak, 3,000 feet high, the bluff being to the north-eastward, which is very conspicuous, and may be seen at a great distance.

Immediately to the westward of Rás Alí Besh Quail is an extensive lagoon of salt water, called Khór Banneh. At 12 miles to the southward of Rás Jered Hafún, and close to the beach, is another lagoon of salt water, called Khór Abdahán, with fresh water in the upper part, where it is fed by a stream running from the valley.

The soundings in the bay are regular, and there is no danger, the depths increase gradually from the shore, to 20 fathoms at from 2 to 5 miles distance, but the 20-fathoms line approaches to about a mile from both

points of the bay: the 40-fathoms line is about 11 miles from the shore; the general nature of the bottom being sand and shells off shore, and rocks close in. There is good anchorage, and shelter, from southerly winds, off the small village in the south part of the bay.*

RÁS JERED HAFÚN, or Shenaríf is a bluff limestone headland, rising abruptly from the sea in four steps to a height of 2,500 feet; it is bold to approach, there being 10 to 16 fathoms water close to the cliffs. From this to Rás 'Aşır the coast is precipitous and bold, the mountains approaching close to the sea, and the water is deep. Care should be taken when approaching this headland not to mistake it for Rás 'Aşır (cape Guardafui).

Wadí Tohum is a fertile valley $3\frac{1}{2}$ miles North of Rás Jered Hafún, full of large mimosa trees, with a stream of water running through it. The natives resort to it in great numbers, and will bring bullocks, sheep, and firewood, to the bay on the west side of Rás 'Aşır. Excellent water might also be obtained from the stream, but the carriage would be expensive.

CAPE GUARDAFUI (RÁS 'ASÍR), the north-eastern point of Africa, 10 miles N. by E. of Rás Jered Hafún, is a precipitous rocky cape 900 feet in height, and may be known by the formation of the land in its vicinity. Between the high land of Jered Hafún and the cape, the land is irregular at the top, with some low even land underneath, which appears separated from it, and forms like double land; from hence the declivity towards the cape forms notches or steps at regular intervals. The cape is frequently enveloped in thick haze, rendering it deceptive in estimating its distance. Approaching from the north-eastward cape Guardafui may be known by the light coloured sand on the top, and the sandy bay to the westward. The cape is steep-to, 12 fathoms water close in-shore, and the soundings extend 18 miles to the eastward, there being 125 fathoms at that distance; to the northward the bank of soundings only extends $2\frac{1}{2}$ miles.

Current.—Care is necessary in making the cape for the gulf of 'Aden, during the S.W. monsoon, the current setting up the coast strong to the northward, and close round the cape to the westward; but at a short distance it continues its course to the northward and eastward, whereby a vessel unless close in with the land, would be set out of her course, and probably lose her passage. (See caution at page 10.) This current commences in the month of March, and continues during the whole of the south-west monsoon.

* This is the best anchorage on this part of the coast, being free from the heavy squalls off the high lands. The soundings decrease rapidly off the village in Ghubbet Banneh. Do not anchor in less than 7 fathoms water.—Navigating Lieut. T. Stringer, H.M.S. *Briton*, 1872.

TIDES.—It is high water, full and change, at cape Guardafui, at about 6h. 15m.; springs rise 6 feet. On the neaps there is no ebb tide, but on the springs it runs in the opposite direction to the current, close in-shore, for 4 or 5 hours during the day.

Supplies.—Turtle may be obtained from the natives at the anchorage under the cape; sheep may also be purchased, but they are small and indifferent. Fish are plentiful and good; the seine may be hauled, and the best place is off a little Somáli village near the beach in a small bay, the best time is about 4.30 a.m. or 4 p.m. Water is not to be obtained.*

The COAST from Rás 'Aşır extends 30 miles in a W.N.W. direction to Rás Alúleh, in a nearly straight line: there are some few small projecting rocky points forming small bays between, but no dangers exist. The soundings rapidly increase in depth from 10 fathoms to the edge of the bank, which off Rás 'Aşır is distant $2\frac{1}{2}$ miles, increasing to $6\frac{1}{2}$ miles off Rás Bouah, and decreasing again to 2 miles off Rás Alúleh.

The mountains, 1,800 to 1,600 feet in height, approach close to the sea, with the exception of some two or three intervening spaces, where the shore is sandy, covered with bushes. Throughout the extent of coast there appears to be no villages. At Barédi, 17 miles from Rás 'Aşır, is a lagoon of salt water, on the sandy plain near the sea; and at Moyah Bouah is another lagoon, and several wells of excellent water about 100 yards from the beach; and water in any quantity can be obtained by digging holes in the sand near them to a depth of 3 or 4 feet. Bouah can be distinguished by the date palms.

Anchorage.—In the bay immediately to the westward of cape Guardafui is good anchorage, and protection from southerly winds, but more to the westward the ground is rocky from the shore to the 10-fathoms line, a distance of one mile.†

RAS ALÚLEH is a very low, sandy, but prominent cape, near the extremity of which is the narrow entrance to an extensive lagoon, called Khór Galwéni, or Great lake, which is covered with mangrove bushes nearly over its whole extent. A river falls into the Khór at its southern extreme, which during the rainy season must be very deep, the bed being

* Nav. Sub. Lieut. Geo. Pirie, H.M.S. *Nimble*, May 1871.

† H.M.S. *Star* while cruising off cape Guardafui in April 1869, found the anchorage close under the N.E. point in 10 fathoms water to be very convenient. Heavy gusts and squalls come over the cliffs, and care must be taken to meet them in time when standing in. In May 1871, H.M.S. *Forte* anchored under cape Guardafui (Rás 'Aşır) in 9 fathoms, with the cape E. $\frac{3}{4}$ N., and a high bluff S. $\frac{1}{2}$ W.

Navigating-Lieutenant A. E. Stanley, H.M.S. *Ruby*, 1881, remarks that the sand hill in line with the west extreme of a range of hills (bearing about S.W. by W.) leads to an anchorage in $4\frac{1}{2}$ fathoms.

250 feet in depth by 900 feet in width. In the dry season the river is navigable for boats 3 or 4 miles from the sea, and farther inland there are pools of fresh water in its bed. The plain from Rás Alúleh gradually ascends until it reaches the high range of mountains in the interior.

Bander Alúleh, a small village and anchorage, lies on the west side of Rás Alúleh. The water at the village is bad, but cattle and abundance of firewood are procurable. At Alúleh large quantities of sharks are caught. In October 1880, when H.M.S. *Seagull* visited Alúleh, they were suffering from want of water, and in consequence game and cattle were scarce. Fish, however, were caught in large quantities with the seine, on the west side of the spit.

Anchorage.—The anchorage is in 7 fathoms on the edge of a narrow ledge of coral, 600 to 800 yards from the shore, with white house (the only conspicuous one) on with highest part of Bluff S.E. by E. $\frac{3}{4}$ E., and the sand point bearing N.E. by E., and is sheltered from north-easterly winds.*

TIDES.—It is high water, full and change, at Alúleh at 6h. 45m.; springs rise 6 feet.

The COAST.—From Rás Alúleh the coast trends to the W.S.W. 15 miles, as far as Rás Fílúk, when it turns to the S. by W. 7 miles to Bander Marayeh. The shore, with the exception of Rás Fílúk, is low and sandy, with an elevated stony plain between it and the range of mountains in the interior. The bank of soundings extends but a short distance from the shore, being 5 miles in width to the northward of Rás Fílúk, and only $1\frac{1}{2}$ miles at Bander Fílúk; the depths increase rapidly from the shore, to 100 fathoms at those distances.

The AUCKLAND BANK was discovered in August 1841 by Lieutenant Hewett, Indian Navy, commanding the E.I. Co.'s steamer of that name, who reported it as an extensive bank having overfalls on it from 17 to 13 and 22 fathoms, in latitude $13^{\circ} 30' N.$, and longitude $50^{\circ} 9' E.$ The spot has not been successfully examined.

RÁS FÍLÚK, or more properly Rás-al-Fíl, and is the Mons Elephas of the Romans, so called from its resemblance in shape to an elephant, is a prominent hill elevated 800 feet above the level of the sea, projecting far into the sea, 9 miles W.S.W. of Rás Alúleh, and whether

* Remark Book, H.M.S. *Lynx*, April and May 1871. Nav. Sub-Lieut. T. Hawkins Smith.

Commander Berners, H.M.S. *Philomel*, in August 1880, says, "the house or the chief at Alúleh was full of goods, cannon, sail, &c., taken from the various wrecks that have occurred," but that "the chief has now entered into a treaty with the English to protect all vessels that may be wrecked."

viewed from the eastward or westward has the appearance of an island, the land about it being low. It is generally called by the natives Rás Belmook, and may be seen at the distance of 40 miles in clear weather. The water is deep off it, there being 18 and 20 fathoms within a quarter of a mile. In October the water was smooth and there was no swell all along the coast.* In the valley to the eastward is a lagoon of salt water, and the bed of a watercourse.

The low sandy point 6 miles to the south-westward of the above named point, where there are 5 fathoms one mile from the shore, is also called Rás Fílúk; and the ancients gave the name of Mons Elephas to the collective headland of which Rás Alúleh is the most prominent point.

ANCHORAGE.—To the westward is a small but deep bay, with good anchorage in from 8 to 10 fathoms water, where shelter may be found from easterly or southerly winds.†

BANDER FÍLÚK or HAAPOO is a small fort and village, situated close to the beach, 5 miles to the southward of the low point of Rás Fílúk, off which is a coral bank with 3 to 10 fathoms water on it; outside of this shallow bank the soundings suddenly deepen to 25 and 30 fathoms, and the edge of the bank is only distant from the shore $1\frac{3}{4}$ miles. Immediately to the north of the village is the entrance of an extensive lagoon, called Khór Fílúk, which is a swamp full of mangrove bushes, extending $2\frac{1}{2}$ miles to the southward, and 8 miles to the northward, there being only a low narrow ridge of sand between it and the sea. Firewood may be procured at the village in any quantity. Gahselí and Galseh are two small villages, each defended by a fort, close to the beach, between Bander Fílúk and Bander Marayeh. The anchorage off them is bad.

Anchorage.—The anchorage is in 6 or 7 fathoms water, with the fort bearing East; good ground tackling is necessary to prevent vessels dragging their anchors off into deep water.

BANDER MARAYEH‡ is the principal town on this part of the coast; it is situated close to the beach, 7 miles to the southward of Bander Fílúk, and is defended by five forts. To the northward of the

* Captain's Remark Book, H.M.S. *Seagull*, 1880.

† H.M.S. *Lynx* in January 1871, anchored in the bay west of Rás Fílúk in 5 fathoms sand; pitch of the Rás bearing N.E. by E. distant 6 cables. From this position towards the Rás the soundings were regular, but to the southward reefs extend some distance off shore.

‡ Navigating Sub-Lieutenant J. H. Smith, H.M.S. *Lynx*, in 1871 remarks:—

“From a distance the situation of Marayeh may be found by steering for Jebel Marayeh that is easily distinguished, from its hummock shape. The town lies at its base and to the eastward of it, or more immediately at the foot of a red precipitous hill about 900 feet high, which has a large natural hole through it close to its summit.”

town is a mangrove swamp, and the bed of a watercourse, which extends in the direction of the mountains. Here is a large trade in gums, which at present lies entirely in the hands of the Banyan traders, but it is open to the English, there being every desire on the part of the natives to have commercial dealings with them. It is only necessary to make arrangements with the merchants at the commencement of the foul weather, to have a cargo ready as soon as the coast is approachable, towards the latter end of August. Commander Berners, H.M.S. *Philomel*, in July 1880, describes Bander Marayeh as a wretched place at this time of the year, being nearly deserted.

ANCHORAGE* off the town is good, in from 5 to 10 fathoms sand, with the Moske S.S.E. $\frac{1}{2}$ E., a half to three-quarters of a mile off shore, the soundings increase gradually to 20 fathoms at $1\frac{3}{4}$ miles distance, after which they become irregular with overfalls; the edge of the bank lies 5 miles from the shore.

Supplies.—Good water may be obtained from a well 2 miles inland; cattle and firewood are generally procurable in abundance.

Jebel Marayeh, a mountain peak 4,000 feet in height, bears S. $\frac{1}{2}$ W. from the town, being the spur of a noble range of limestone mountains, which extend inland to the eastward, and attain the height of 5,000 feet; the range likewise extends along the coast to the W.S.W. a distance of 23 miles, where they approach close to the sea, and vary in height from 1,500 to 3,000 feet. They are covered with the frankincense tree.

The COAST from Bander Marayeh to Rás Gorí, a distance of 47 miles, trends in a general W. by S. direction, is slightly concave, with small projecting rocky points, and bays between them. The soundings are deep, and the shore bold to approach, there being no dangers except off Bander Khór, where a bank of 3 fathoms extends off shore to the N.W., and West one mile. The edge of the bank of soundings varies in distance from the shore from $1\frac{3}{4}$ to 6 miles. The general nature of the bottom is sand. At 7 miles to the westward of Bander Marayeh, and close to the beach, is the small village of Aurbah, which has a fort for its defence; and 3 miles farther to the westward is a small rocky point called Rás Aurbah, which is not distinguishable from any other part of the coast.

BANDER KHÓR is an anchorage 12 miles to the eastward of Rás Gorí. The town is situated 4 miles from the sea, on the banks of a river into which the sea flows for a distance of 5 miles, and is navigable

* H.M.S. *Seagull* anchored at Bander Marayeh in 5 fathoms water, on sand, with the peak having the hole in it bearing S. by E. $\frac{1}{2}$ E., and the north white building E. $\frac{1}{2}$ S. Captain's Remark Book, October 1880.

for small boats up to the town at high water. During the rainy season, the river discharges a large quantity of water; the entrance may be known by a low white sand-hill to the eastward, close to the beach, and being between two high ranges of mountains. The land one mile in-shore is tabular, and elevated 400 feet above the sea. On the western side of the entrance is a small village and fort; and 3 miles S.W. of the fort are some ruins and a small lagoon. A bank of sand, dry at low water, lies across the mouth of the river, and a bank of 3 fathoms water extends off shore three-quarters of a mile. Off this bank there is very good anchoring ground in from 6 to 10 fathoms water, but there is no protection, being an open roadstead.

A considerable trade is carried on here in guns, &c., which, as at Bander Marayeh, might be made available for English vessels, but is at present enjoyed by Banyan traders. Here, as at all the towns on the coast, sheep, firewood, and water are to be procured.

RÁS GORÍ is a high rocky cape, 60 miles W.S.W. of Rás Fílúk, being the termination of a high range of lofty table mountains, which stretch away to the E.S.E., and are elevated 4,600 feet above the level of the sea; the sides of these mountains are clothed with large frankincense trees. On the western side of the cape is a village named Boreh, which has a fort for its defence. The soundings off the cape are very deep, and the 100 fathoms line is only distant from the coast one mile.

RÁS ANTAREH,* a high rocky cape 9 miles W. by S. from Rás Gorí, is the termination of another range of lofty tabular mountains, called Jebel Antareh, thickly covered with the frankincense tree, and elevated 5,000 feet above the sea; the shore between the two capes is sandy and covered with bushes. The soundings extend off shore 3 miles. From Rás Antareh the coast runs W.S.W. 16 miles to Rás-al Hamr, and is divided into two shallow bays by a rocky point called Rás Abúrgabeh, $6\frac{1}{2}$ miles S.W. of Rás Antareh. The shores of these bays are sandy, and backed by a range of hills from 800 to 1,500 feet elevation. Close to the westward of Rás Abúrgabeh are two small villages, and a fort named Bander Barthe, at which sheep and water are procurable. With the exception of a small 2 fathoms bank half a mile North of the westernmost of the villages, the soundings are regular, and there are no dangers; the depths increase gradually to 20 fathoms, from which they rapidly deepen into no bottom at 120 fathoms at the distance of 2 to 6 miles from the shore. The general nature of the bottom is sand. In the bay westward of Rás Abúrgabeh, there is very good anchorage in 9 and 10 fathoms

* See Admiralty chart, Africa, N.E. coast, No. 1,006; scale, $m=0.25$ of an inch.

$1\frac{1}{4}$ to $1\frac{1}{2}$ miles from the shore, but it affords no protection except from land winds.

RÁS-AL-HAMR is a prominent, sharp, rocky point, about 300 feet high, terminating a narrow ridge of hills. The soundings North of the point increase from 5 and 6 fathoms close to, to 10 fathoms at $1\frac{1}{4}$ miles distant, and 100 fathoms at $2\frac{1}{2}$ miles. North-west of the point depths of 4 to 6 fathoms extend for a mile. On the western side of the point is an inlet from the sea, called Khór Maraio, into which a stream of fresh water, which runs through the valley, flows after heavy rains. The bed of this stream is dry in the dry season, but water is always procurable by digging holes in it.

CHAPTER III.

SOMÁLI COAST. RÁS-AL-HAMR TO STRAIT OF BAB-EL-MANDEB.

VARIATION in 1882.

Burnt island $3^{\circ} 40'$ West. | Berbereh $4^{\circ} 20'$ West.
 Gulf of Tejúreh $4^{\circ} 40'$ West.

The COAST from Rás-al-Hamr, runs in a general direction West for 40 miles to Rás Hadádeh; it is slightly concave forming a bay, generally low with occasional hills, and backed by the high mountain range Jebel-ahl-oor-Singally an enormous ridge of limestone averaging 6,500 feet in height, and perfectly level along the summit. The range extends as far west as Meyet. At the extremities, and towards the lower range of hills in front of it, it descends in steps, which form perpendicular precipices 800 and 1,000 feet in depth. The mountains are covered with frankincense and myrrh trees, as are all the hills about Bander Gorí. The soundings on this portion of the coast appear regular, but deep: the 10 fathoms line is from a half to one mile distant from the shore, and the edge of the bank of soundings is from $1\frac{1}{2}$ to 4 miles, being very steep; the soundings in some parts falling rapidly from 20 to 100 fathoms. The bottom is rocky in-shore; sand, and sand and shells farther out.

BANDER GHÁSİM, a town and anchorage $7\frac{1}{2}$ miles to the westward of Rás-al-Hamr, consists of about 100 huts and 5 forts. It is the principal town of the Mijjertheyn Somális, and has a large trade in gums, &c. At $1\frac{1}{2}$ miles to the westward of the town is the bed of a broad stream, which after heavy rains discharges a large quantity of water into the sea.

ANCHORAGE.—Off the town is a coral bank, dry at low water, extending half a mile from the shore, outside of which is moderately good anchorage in from 6 to 8 fathoms water, over a sandy bottom, but it is not protected, being an open roadstead.

Supplies.—There are wells in all the forts, from which good water may be obtained; sheep and firewood are procurable.

BANDER ZÍÁDEH, a small town and fort, 12 miles westward of Bander Ghásim, is the termination of the Mijjertheyn territory. The 10 fathoms line is nearly a mile from the shore, from which the soundings rapidly increase to 100 fathoms at a distance of $2\frac{3}{4}$ miles. The bottom is

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sand and rocks. Anchorage is indifferent and not protected. The coast in the vicinity is bounded by a low broken ridge of hills. At $3\frac{1}{2}$ miles to the eastward of the town is a stream of water, which is fresh in the rainy season, and navigable for boats for about 3 miles: and both East and West of the town is a small stream after heavy rain. Aleyah is a small village 5 miles West of Zíádeh, and one mile farther to the westward is a broad stream of fresh water after rain.

The Singally Somális tribe, who inhabit the coast from Bander Zíádeh to Bander Jedíd, are divided into several clans; they are a powerful and warlike people. Brothers, by the same mother, of the Mijjertheyn, they generally coalesce should war break out; but petty feuds and plunder are of frequent occurrence. It is worthy of remark that in this tribe theft is looked upon with abhorrence, though doubtless in the event of a wreck they would consider it fair to plunder. Their country may be described as a plateau of limestone mountains, precipitous to the north, and gradually sloping to the south. Between the mountains and the sea, undulating ranges occur, intersected by ravines, and thickly wooded; whilst the belt of level ground near the sea is thinly sprinkled with bushes, exhibiting a plain of white sand.

Frankincense, myrrh, *sumuk* or gum-arabic, sheneh (orchil), and ghí, form the export of this tribe; and a peculiar kind of gum, called *felleh felleh*, which is imported into 'Aden in large quantities from the coast.

RÁS HÁDADEH, a rocky point about 300 feet high, at the back of which is a cluster of hills 600 feet in height, between which and the village of Aleyah a black table-land of basalt and volcanic rock, of about 300 feet in height, approaches close to the sea.

The COAST from this point to Rás Galwéni trends W.S.W., a distance of about 46 miles. It is low near the sea, with an occasional hill, and bounded in the interior by the high range of Jebel-ahl-oor-Singally. The soundings on this part of the coast are irregular, and the bank extends off shore from $1\frac{1}{2}$ to 4 miles. There are several villages along the coast, also khórs or lagoons, in which the water is fresh after rain.

Anchorage may generally be found in from 5 to 10 fathoms water close to the shore, but it is indifferent, the bottom being sand and rock, and there is no protection.

Dúrderí, a small village with a fort, $4\frac{1}{2}$ miles westward from Rás Hádadeh, has a fresh-water khór close to the westward of it. The edge of the bank of soundings is here 2 miles from the shore, and 10 fathoms half a mile. Nearly 5 miles West from Dúrderí is a low sandy point called Rás Dóghilli, on which is a small isolated table hill of 600 feet elevation.

RÁS GÁHM is a broad, low, flat, sandy point, 16 miles from Rás Hádadeh, the soundings off which extend only $1\frac{1}{2}$ miles, and suddenly drop from 10 to 75 and 100 fathoms. There are several inlets from the sea at the point, in which the water is fresh after rain, and a large fresh-water lagoon. On the western side of the cape are three small villages, and a fort, called Bander Gáhm, where is a trade in gums.

The anchorage off these villages is bad, the water being deep, 12 fathoms close in-shore, and the ground rocky.

RÁS GORÍ is a low sandy point, $7\frac{1}{2}$ miles W.S.W. of Bander Gáhm, on which are several small sand-hills, and a khór of brackish water, which is little more than a swamp. On the western side of the point is situated the principal town of the Singally Somális ribe, called Bander Gorí, consisting of three forts and two large villages. Here is a large trade in gums.

The Anchorage off the town is bad, the bottom being rocky, and the soundings very irregular: the best berth would probably be found N.E. of the town, in 7 to 10 fathoms, three-quarters of a mile from the shore. Cattle, water, and firewood are procurable at the town.

Tides.—It is high water at Bander Gorí, full and change, at 8h. 45m.

RÁS GALWÉNI is a low sandy point, to which a spur of the mountain range slopes. The bank of soundings extends a little more than 3 miles from the shore, the 10-fathoms line being about one mile distant, from which it rapidly falls off into 50 and 100 fathoms. The bottom is chiefly sand and coral.

The Coast between Rás Galwéni and Bander Gorí is low and sandy, and bounded a short distance in the interior by ranges of undulating hills.

From Rás Galwéni the coast line continues West 9 miles, to a point with no name attached to it; whence to Rás Súereh, a distance of 15 miles W. $\frac{1}{2}$ N., it forms a bay $3\frac{1}{2}$ miles in depth. The shore is low and sandy the whole distance, and thinly covered with bushes at a short distance from the beach. Between the high range of mountains in the interior and the beach are ranges of undulating hills. The edge of the bank of soundings is at an average distance of $2\frac{1}{2}$ miles from the coast for the first 13 miles, after which, at a point, E. by N. of Rás Súereh, it is 7 miles distant. The 10-fathoms line is about three-quarters to one mile off shore, from which the depths rapidly increase to 100 fathoms. The general nature of the bottom is sand and coral, occasionally shells, and towards the edge of the bank it is mud.*

* See Admiralty chart, Aden gulf, No. 66; scale, $m = 0.2$ of an inch.

RÁS SÚEREH is a low bluff point, from which the coast line to Rás Katíb, a distance of 22 miles in a direction W. by S. $\frac{1}{2}$ S., is slightly convex. For a distance of 3 miles from Rás Súereh the coast is formed of low cliffs, after which it becomes low and sandy, and at a short distance from the beach it is covered with bushes. The range of undulating hills, just mentioned still continue to bound the coast, with occasional spurs from them approaching the sea.

Bander Jedíd, a small village $6\frac{1}{2}$ miles West of Rás Súereh, close to the beach, is the boundary of the Wursúngeli territory: the inhabitants are not always inclined to be civil to strangers. South-east of the village, and distant 3 miles, is an isolated hill called Jebel Berdair.

RÁS HAMB AIS, a low sandy point 8 miles W. by S. $\frac{1}{2}$ S. from Bander Jedíd, may be known by a large single tree on the beach: 8 miles W.S.W. of this point is Rás Katíb, a low rocky bluff point, off which the soundings are very deep, there being 22 fathoms water close to it, and to the westward of it the soundings do not extend beyond a mile.

MEYET or **BURNT ISLAND**, is a barren rock, 430 feet above the sea, perfectly white, being covered with guano, which is collected and carried in native boats to the Shehr and Makalleh markets. It is situated $5\frac{1}{2}$ miles from Rás Hambais, the nearest point on the mainland, which bears from it S. by $\frac{1}{4}$ E., and Rás Katíb bears S.S.W. $\frac{3}{4}$ W. A reef projects about 200 yards from its western extreme, with a sunken rock having only 2 fathoms water over it. The soundings in the channel between the island and the main, in which there are no dangers, are very irregular, varying from 13 to 22 fathoms, and to the south-eastward to 78 fathoms. The depths close to the island are 13 to 19 fathoms. The edge of the bank of soundings is 3 miles distant to the northward of the island, and the same to the westward; to the north-eastward it is $5\frac{1}{2}$ miles distant. The nature of the bottom is chiefly coral, occasionally it is sand, or sand mixed with shells. Vessels bound to 'Aden or the Red sea, during the south-west monsoon, should keep along the Somáli coast until off Meyet island, when they should stretch off from it for the Arabian coast.

Mention is made in Horsburgh's Directory of a spring of water existing on the southern side of the island, near the centre: this, however, appears to be an error, as no water is to be found except in rainy weather, which lodging in pools on the summit of the rock, percolates through, and finds its exit close to the water's edge. The face of the rock on the south side of the island is frequently moist, and bears the appearance of rain having filtered through its crevices.

On the south side of the island is a remarkable cove or natural dock, capable of admitting a ship of 300 tons by clenching the ends of a cable

through the holes in the rock: the remains of two clenches of cables were found affixed to the rock in 1801.* In October 1844, the remains of a hempen cable was found, which had been apparently rove through a hole in the rock.†

The COAST from Rás Katib runs S.W. 8 miles to Jebel Meyet, a mountain 1,200 feet high, which terminates on the coast at a small rocky point. The coast for 4 miles from Rás Katib is composed of low cliffs, after which it becomes sandy. The soundings are very deep, and the edge of the bank is only $1\frac{1}{2}$ miles distant from the shore, thus affording no safe anchorage.

MEYET is 2 miles eastward of Jebel Meyet and is the burial place of Meyet, the founder of the Edoor nation, and their present limit to the eastward. It is situated on a small plain, bounded in the south and south-west by the western extreme of the lofty Jebel-ahl-oor-Singally range which here approach within two hours' journey of the sea. From Meyet a large quantity of white ebony is exported, also a long and thin rafter used both at 'Aden and on the coast in the construction of native houses. The hills immediately over the town afford a large supply of very fine gums, and the place carries on a considerable trade with 'Aden and Makalleh.

The COAST from Jebel Meyet turns West for 4 miles, when it forms a low, round, sandy point called Rás Jalbú, off which the soundings are very deep, only extending off shore half a mile. S. $\frac{1}{2}$ W. from Rás Jalbú the high range, Jebel-ahl-oor-Singally, terminates in a lofty pyramidal peak, 6,170 feet above the level of the sea; and 11 miles to the eastward of the peak is the highest part of the range, 7,150 feet high.

GHUBBET RAKÚDEH.—Between Rás Jalbú and Ankór, a distance of 46 miles in a W. by S. direction, the coast forms a deep bight called Ghubbet Rakúdeh. The shore is low and sandy, with ranges of undulating hills a short distance in the interior. The bank of soundings off it is very narrow, extending only from $1\frac{3}{4}$ to 3 miles from the shore, and the water is very deep. Hais island is a small rocky islet $5\frac{1}{2}$ miles W.S.W. from Rás Jalbú, and about 400 yards north of a bluff point 510 feet in height, called Jebel Rét. On the western side of this bluff point, and close to the beach, is the village of Hais, which is small, and of no note. In the centre of the bay, and 19 miles from Hais, is a village in ruins, named Rakúdeh: $8\frac{1}{2}$ miles East of the ruined village is a sharp

* Horsburgh's Directory, 8th edition, vol. i. p. 299.

† Report by Lieutenant C. J. Cruttenden, Indian Navy.

peak on the hills, named on the chart Finger peak; and 12 miles to the westward is a deep valley, called Wádí Massineh, with a stream of fresh water running through it. There are several small streams, which in rainy weather, discharge themselves into the sea. Ankór is another small village situated on the beach, 2 miles west of the western point of Ghubbet Rakúdeh; it is a place of little note: here the soundings extend 2 miles off shore, there being 10 fathoms water close in. At $1\frac{1}{2}$ miles South is an isolated hill named Jebel Marreh; $5\frac{1}{2}$ miles in-shore, bearing S.S.E. from Ankór, is Sugar-loaf hill 994 feet above the sea; and S. $\frac{1}{2}$ W. distant 14 miles is Ankór peak, 5,700 feet high.

The COAST.—From Ankór to Rás Khamzir, a distance of 24 miles, the coast trends more northerly, and is slightly concave, forming Ghubbet Ankór. The shore is low and sandy, and the soundings are still deep, but extend farther off shore, the edge of the bank being from $3\frac{1}{2}$ to $5\frac{1}{2}$ miles distant to the eastward of Rás Khamzir; to the northward it is only one mile distant. The bottom is sandy and affords better anchorage than to the eastward. Nearly 4 miles to the eastward of Rás Khamzir, is the entrance to a large shallow inlet of the sea called Khór Shoreh.

Rás Khamzir is a low, sharp, rocky point, with sandy beaches on either side; and, inland is a range of irregular hills of various elevations.

KARRAM, a village 3 miles S.W. of Rás Khamzir, is the most important town or village of the Haber-al-Jahleh branch of the Edoor or western tribe of Somális, from its possessing a tolerable harbour, and being the nearest point from 'Aden, which bears from it N.N.W.; the wind is consequently fair, and boats laden with sheep for the 'Aden market pass but one night at sea, whilst those from Berbereh are generally three. What greatly enhances the value of Karram, however, is its vicinity to the country of the Dalbahanta, who approach within four days' journey of it, and who therefore naturally have their chief trade through that port.

The Anchorage is tolerably good, west of the town, in from 4 to 10 fathoms water, sandy bottom, one-quarter to three-quarters of a mile from the shore, where there is shelter from easterly winds. The soundings extend off shore a distance of 3 miles.

The COAST from Rás Khamzir trends W.S.W. 31 miles to Rás Katíb. It is slightly concave, generally low and sandy, with numerous hills of various elevations a short distance in-shore, and bounded in the interior by a range, called Jebel Kalsam, the highest peak of which, bearing S. by W. from Rás Katíb, is 2,600 feet above the sea. The coast forms several points, with small bays intervening. The soundings are shoaler, and the bank extends farther from the shore, than the part

of the coast last described. The bottom in-shore is composed of sand and shells, and off-shore, of sand and coral.

Rás Siddeh is a rocky point, being the termination of a hill sloping down to the sea; a reef extends off from the point about 200 yards, immediately outside of which there are 16 and 18 fathoms water. The edge of the bank of soundings is distant $4\frac{3}{4}$ miles from the shore; the depths increase gradually from the shore to 26 fathoms at $3\frac{1}{4}$ miles distance, whence the edge of the bank is very steep.

Enterád is a small village 3 miles S.S.W. from Rás Siddeh, having a large trade with 'Aden in sheep. There is very tolerable anchorage off the village, in from 6 to 8 fathoms water, distant one to $1\frac{1}{2}$ miles from the shore: the 10 fathoms line is 2 miles, and the edge of the bank 7 miles distant.

Rás Wálhún is a low, round, projecting, sandy point 8 miles S.W. of Rás Siddeh, off which is a shallow spit extending three-quarters of a mile. Between the point and Enterád is a small hill near the sea, 235 feet high, called Kamádeh. To the westward the coast runs West 10 miles to Rás Katíb; it is low and sandy; and at a distance of $3\frac{1}{2}$ miles inland, between the beach and Jebel Kalsam, and nearly parallel with the coast line, are several peaks, varying in height from 1,000 to 1,250 feet. The soundings on this part of the coast are shoaler, the 10-fathoms line being 2 miles from the shore, decreasing gradually in depth towards it: the edge of the bank is 4 miles distant, and very steep, the soundings suddenly dropping off from 15 to 65, and then no bottom at 100 fathoms.

RÁS KATÍB, which is a low sandy point, off which the edge of the bank is again only one mile from the shore.

The COAST from Rás Katíb trends S.W. by W. 24 miles to Berbereh, being low and sandy, and the soundings only extend from one to 2 miles from the shore. Seyáreh is a village consisting of a few small huts, and two rude stone buildings, with about 15 inhabitants, 5 miles S.W. of the cape, where are some wells of good water, situated about 60 yards from the beach. The wells are three in number, and each about 3 feet in diameter; after clearing away the sand for about 4 feet in depth, there is a flat hard rock which has evidently been cut through, and at the depth of 6 feet from the surface a good spring of water is found. These wells are frequently filled up with sand, rendering it almost impossible for a stranger to find them.

Anchorage.—There is anchorage off Seyáreh in 10 fathoms, about half a mile from the shore, but no protection or shelter of any kind. To the eastward of the village is a hill of the same name, 1,240 feet in height.

Rás Alwéni is a slightly projecting, low, sandy point, 8 miles N.E. of Berbereh, close off which is a sunken rock. There are no soundings beyond $1\frac{1}{2}$ miles from the point.

BERBEREH,* the only harbour on the coast, lies in a direction E.N.E. and W.S.W., and is formed by a curve in the coast line and Tamar point, a low sandy point projecting off shore to the westward $1\frac{1}{2}$ miles. It is one mile wide at the entrance, and free from all danger, having 11 to 13 fathoms water at the mouth, decreasing very gradually towards the shore, there being 5 fathoms water at 400 yards distance: it affords good anchorage, and complete shelter from all winds except from the westward. The low sandy point is very steep-to, having 15 fathoms water within 80 yards of it. There is excellent seining to be had off the west end of the spit. Captain L. Brine, H.M.S. *Briton*, in 1874, remarks that Tamar point has slightly extended westward, and the depths in the anchorage are decreasing.†

The town of Berbereh is situated at the head of the harbour, and varies in dimensions and population according to the season of the year. From October to March, or the trading season, the population amounts to 10,000 or 15,000 souls. The tribes from the interior commence to assemble in October, and are constantly arriving as late as March, bringing with them the produce of the country, which consist of ghí, ivory, myrrh, gums, coffee, cotton, &c.; these are exchanged for cotton cloths, piece goods, shawls, copper wire, zinc, &c. The trade is entirely in the hands of Banyan merchants, who enter into agreements with the tribes for the produce of the following year, and have their baghalahs ready in the harbour to receive it as soon as it arrives.

The annual fair,‡ which commences in October and lasts till the end of March, is one of the most interesting sights on the coasts. As soon as the season changes the inland tribes commence moving down towards the coast, and prepare their huts for the expected visitors. Small craft from the ports of Yemen, anxious to have an opportunity of purchasing before vessels from the Persian gulf arrive, hasten across, followed about a

* See Admiralty chart, African coast, Jebel Ján to Seyáreh, 2 sheets, No. 253b; scale, $m=0.25$ of an inch: also plan of Berbereh port; No. 675; scale, $m=3.0$ inches.

† The town of Berbereh is easily seen when coming from the eastward or northward, and the lighthouse which is chequered red and white is also visible from seaward. To the eastward of Berbereh there is a high irregular mountain, which seen on a S.W. by S. bearing has six peaks all inclined to the eastward; at this mountain's length to the westward is a gap or pass, Berbereh will be made a short distance to the westward.—Nav. Lieut. W. Strugnell, Remark Book, H.M.S. *Philomel*, November, 1880.

‡ This description of the annual fair is by Lieutenant C. J. Cruttenden, Indian Navy; Journal R. Geog. Soc., vol. xix. 54.

fortnight to three weeks later by larger vessels from Maskat, Súr, and Rás-al-Khaïmeh, and the valuable freighted baghalahs from Bahrein, Basreh, and Grane; lastly, the fat and wealthy Banyan traders from Pór-bander, Mandavi, and Bombay come across in their clumsy kotieh, and elbow themselves into a prominent position, in the front tier of vessels in the harbour, and by their superior capital, cunning, and influence soon distance all competitors.

During the height of the fair, Berberéh is a perfect Babel in confusion, as in languages; no chief is acknowledged, and the customs of bygone years are the laws of the place. Disputes between the inland tribes daily arise, and are settled by the spear and dagger, the combatants retiring to the beach at a short distance from the town, in order that they may not disturb the trade. Long strings of camels are arriving and departing day and night, escorted generally by women alone until at a distance from the town; or an occasional group of dusky and travel-worn children marks the arrival of the slave kafleh from Harrar and Efât.

By the end of March the fair is nearly at a close, and craft of all kinds, deeply laden, and sailing generally in parties of three or four, commence their homeward journey. The Sûri boats are usually the last to leave, and by the first or second week in April Berberéh is again deserted, nothing being left to mark the site of a town, beyond the bones of slaughtered camels and sheep, and the framework of a few huts carefully piled on the beach in readiness for the ensuing year. Beast of prey now take the opportunity to approach the sea: lions are commonly seen at the town wells during the hot weather; and in April 1847, but a week after the fair had ended, three ostriches were observed quietly walking on the beach.*

There is an extensive burial-ground with the remains of a mosque in the vicinity of Berberéh. The natives report that at one time a large town existed here. That Berberéh has existed as a port of great trade for several centuries, is almost sufficiently proved by the fact of its being an annual rendezvous for so many nations, and from the time for this great meeting having been chosen so as to suit the set of the Red sea and Indian monsoons. But beyond the remains of an ancient aqueduct, it exhibits no proof of antiquity.

* Commander H. R. Berners, H.M.S. *Philomel*, remarks, in November 1880, when he visited Berberéh, "This place has been much improved during the last year by the present Governor, and is now as far as the Egyptian town is concerned the cleanest and best built on the coast. Water is in abundance. There is also a good pier. The trade, however, has fallen off of late years, and the annual fair which was going on, was but thinly attended."

The Haber Awal branch of the Edoor tribe occupy the low lands between Berbereh and Karangarít, near Zeyla, a fertile tract of country, with several low ranges of hills, averaging perhaps 40 miles in depth, by 90 miles in length. The number of sheep and camels found on these plains is perfectly incredible; asses are very numerous, and most admirably adapted to the country. The camels are small and weak, and never used for riding, except in cases of sickness, or a wound. The Haber Awal have no chief; the custom of their forefathers are the laws of the country, and appear to be based upon the simple principle that might gives right. Theft is punishable with the loss of the right hand, but, fortunately for them, this is not insisted on, for they are most inveterate thieves.

Landmarks.—A cage beacon about 15 feet high, constructed of iron and painted black and white in horizontal bands, has been placed on the west extreme of Tamar point.

A small square tower painted white standing in the middle of the town is a conspicuous object when seen from seaward, and if kept on an E. by N. $\frac{3}{4}$ N. bearing will lead to an anchorage in 5 fathoms, mud, about 4 cables from the town; this tower, together with several white stone buildings, render the town of Berbereh conspicuous when in the offing.

Water is now supplied to the Egyptian town by pipes, from the hills distant about 7 miles.*

LIGHT.—On the south shore of port Berbereh, near high water mark, is erected a lighthouse, exhibiting a white *fixed* light, at 76 feet above the sea, and visible 14 miles. The lighthouse bears S. by W. $\frac{3}{4}$ W., distant $1\frac{1}{2}$ miles from Tamar point. By keeping the lighthouse well open to the eastward of South, the spit off Tamar point will be avoided.

TIDES.—It is high water, full and change, at Berbereh, at 7h. 15m.; springs rise 9 feet.

The COAST.—The general direction of the coast from Berbereh is West for 40 miles, or until near Jebel Elmas; it then takes a north-westerly direction as far as Zeyla. The whole extent of this part of the coast is low and sandy, rising gradually towards the range of mountains which bound it in the interior, at an average distance of 18 to 20 miles, but which approach to within a few miles of the beach in the vicinity of Berbereh. The mountains between Jebel Elmas and Berbereh recede 15 to 20 miles from the beach, forming a deep curve, and the coast being low, gives it the appearance of a deep bay.

Jebel Elmas is a rugged irregular mountain, the highest peak

* Nav. Lieut. W. Strugnell, H.M.S. *Philomel*, November 1880.

being rather more than 2,000 feet above the level of the sea, and the base of it distant from the beach about 8 miles.

The coast from Berbereh to Karangarít has not been surveyed, but there is said to be no danger between those places ; the shore is bold to approach, there being 6 and 7 fathoms water close in.

The 20-fathoms line between Berbereh and Jebel Elmas is about $1\frac{1}{2}$ miles from the shore, thence increasing to 7 miles off Karangarít, outside of which line there is no bottom to be found at a depth of 40 fathoms. There are no villages on this portion of the coast.

Khór Karangarít is a small inlet of the sea, and distant about 92 miles from Berbereh ; it is shallow, and can only be entered by very small boats at high water. A low sandy plain extends from it to the foot of the mountains, which are distant about 20 miles.

SHÁB KARANGARÍT, a dangerous rocky patch just awash at low water, is distant from the shore 2 miles, bearing from the entrance of the khór, E.S.E. $5\frac{1}{2}$ miles ; and from a thick clump of bushes, resembling, when seen from a distance, a tree, about three-quarters of a mile from the beach, N.E. by E. $\frac{3}{4}$ E. It has 9 and 11 fathoms water close to it all round, and the soundings gradually increase to 40 fathoms, at a distance of 5 miles to the north-eastward.

Khór Madúji, another small inlet from the sea, is situated on the coast, $7\frac{1}{4}$ miles to the north-westward of Khór Karangarít, with which it is said to be connected by a swamp or backwater. The coast between them is low and sandy, with a range of sand-hills in the interior, distant from the beach one to 2 miles. It is much frequented during moderate weather by small boats from Berbereh, Zeyla, and Tejúreh, for firewood and wood for house-building.

SHÁB MADÚJI is a dangerous rocky shoal, nearly 2 miles in length by three-quarters of a mile in breadth, lying N.W. and S.E., and distant from the nearest land $2\frac{1}{4}$ miles. About the centre of the inner or south-western side is a small sand-bank, which is covered at high-water springs. The centre or dry part of the shoal bears from Khór Karangarít N.N.E. $4\frac{1}{4}$ miles ; from Khór Madúji S.E. by E. $\frac{1}{2}$ E. $5\frac{1}{2}$ miles ; and from Sháb Karangarít N.W. by N. 7 miles. To the north-west, north-east, and south-east of it the soundings are regular, there being 10 and 11 fathoms water at a distance of $1\frac{1}{4}$ miles, increasing gradually to 40 fathoms at a distance of $9\frac{1}{2}$ miles from the shore ; but between the shoal and the shore the soundings are irregular, there being a bank with 2 to 3 fathoms water on it, on either side of which there are 7 and 8 fathoms.

One mile and a half N.E. by N. from Khór Madúji is a bank with one and 2 fathoms water over it, on which the sea breaks heavily at times,

between which and the shore the depth is 4 fathoms, and 7 fathoms immediately to seaward.

RÁS MASKAN is a low, round, and slightly projecting point, off which a reef of rocks extends one mile. Immediately in-shore, during the rainy season, or months of December, January, and February, there are several pools of fresh water in the bed of a watercourse, which runs inland to the W.S.W. At $2\frac{1}{2}$ miles N.E. of the cape is a dangerous reef of rocks, just awash at low water, rather more than half a mile in diameter, with 5 to 9 fathoms water close to it all round: it bears from Zeyla mosque S.E. $\frac{1}{2}$ S. $11\frac{1}{4}$ miles. The channel between the reef and the reef projecting from the cape is $1\frac{3}{4}$ miles wide, with 5 to 7 fathoms water over a sand and mud bottom.

The COAST from Rás Maskan to Zeyla, a distance of 12 miles N. by W. $\frac{1}{2}$ W. is low and swampy, with a range of sand-hills, from 30 to 40 feet in height, about 2 miles from the beach. It is fronted by a reef of rocks, which extends in some parts half a mile from the shore. Off this part of the coast are the following dangers:—

DANGERS.—**Sháb Sheikh Yakúb.**—A reef of rocks, dry in some parts at low water, and more than half a mile in diameter, having 6 fathoms water close to it all round. It is distant from the shore 4 miles, and bears from Zeyla mosque S.E. by E., distant 6 miles.

A rocky patch, having $2\frac{1}{2}$ fathoms water on it, and 4 fathoms close to. It is $2\frac{1}{4}$ miles from the shore, and bears from Zeyla mosque S.E. $\frac{1}{2}$ S., distant $4\frac{1}{2}$ miles.

A 5-fathoms bank, 5 miles off shore, and bearing from Zeyla mosque S.E. $\frac{1}{4}$ E., distant $7\frac{1}{2}$ miles.

With the exception of these banks, there are no known dangers until Zeyla is approached. The soundings increase gradually from the shore to seaward, until a depth of 40 fathoms is reached, beyond which depth no soundings have been taken.

ZEYLA is a place of some importance, being the only port on the Essah coast, and having a trade with Mokhá and the neighbouring parts. It is built on a low sandy point, nearly level with the sea, projecting to the N.E., called Rás Hamár, and consists of a mosque, 12 to 15 stone houses, and probably 200 huts, the whole enclosed within a mud wall, which is in a most ruinous condition. The population in 1848 amounted to about 750 souls. In September 1879, the town, including most of the principal buildings, was destroyed by fire. The mosques, and a few houses and huts at the N.E. end alone escaped destruction, but it has since been rebuilt. Zeyla no doubt was originally intended to serve as a sea-port for Harrar. A vessel of 250 tons cannot approach within a mile of the town.

The town is under the Sheriff of Mokhá, who has the power of displacing the governor, but who yet receives no part of the revenue. The governor pays an annual tribute to the Sheriff, and reserves all that he can collect above the tribute for himself. The principle articles of export are coffee, dye, ghí, ivory in small quantities, and ostrich feathers. A vessel would doubtless obtain a valuable cargo of coffee and mules. But a small quantity of gums is brought into Zeyla. There are a few Arab and Somáli soldiers kept for the defence of the place. The custom house is at the west end of the town, and the pier runs off from it.

Water is supplied from a watercourse about 4 miles S.W. of the town, where there is a small tower and a guard of five or six soldiers to protect the watering parties.

Arab Shoal.—H.M.S. *Arab*, when approaching Zeyla from the northward, obtained soundings in $9\frac{1}{4}$ fathoms, the water being slightly discoloured. The vessel then anchored in $8\frac{3}{4}$ fathoms coral sand, 2 cables from the spot where the first cast was obtained, and at noon the ship's position was determined. The vessel shortly after weighed and proceeded in a direction S.W. by S.; the soundings gradually decreased until about a mile from the vessel's anchorage, when the least depth of 5 fathoms was obtained. The position of the shoal thus discovered is lat. $11^{\circ} 38' 50''$ N., long. $43^{\circ} 39'$ E.*

From this spot the depths increased for half a mile to 14 fathoms, the last cast obtained.

The current was setting N.N.E. about half a mile an hour.

The Harbour.—There are so many reefs and dangers in the vicinity of Zeyla, that it is almost impossible to give a clear description of them.

The harbour is 2 miles wide North and South, by 3 miles East and West, having depths of 3 and 4 fathoms at low-water springs, with a muddy bottom, the deepest water being near Sadaldín island. It is bounded on the west by a series of sand-banks extending from Rás Takúsheh, a low sandy point $3\frac{3}{4}$ miles W. by N. of the mosque, in a north-north-easterly direction towards Sadaldín island, having three channels between them, each about 300 yards wide, with 3 fathoms water in them at low-water springs.

On the north it is bounded by Sadaldín island, which is of coral formation, 20 feet above the level of the sea, and thickly covered in some places with bushes, otherwise perfectly barren. The island is 2 miles long in a North and South direction, by $1\frac{1}{2}$ miles East and West: a reef extends

* See Admiralty chart, African coast, Jebel Jan to Seyáreh, No. 253a; scale, $m = 0.25$ of an inch.

from it in all directions, to a distance of one mile from its S.E. and S.W. extremes: at one-quarter of a mile from its N.W. end, and half a mile from its N.E. end. To the eastward of the island, and separated from the reef by a narrow channel 700 yards wide, with 4 to 6 fathoms water in it, is a reef one mile long, lying N.E. and S.W., dry in some parts at low-water springs: it bears from Zeyla mosque N. by E. $\frac{1}{2}$ E. 5 miles; and South of this reef nearly mid-channel is a small patch of 2 fathoms. A buoy was placed to mark the position of this shoal, but it had disappeared* in April 1879. There is a small village and tank of water at the south end of the island. On the south the harbour is bounded by the reef, which extends from the shore three-quarters of a mile, and from Rás Hamár $1\frac{1}{4}$ miles to the North and N.E. A bank of hard sand, having on it $2\frac{1}{2}$ and $3\frac{1}{2}$ fathoms water at low water, extends from Rás Hamár $4\frac{1}{2}$ miles in a direction E.N.E., and is 3 miles in width.†

Sháb Filfil are two sunken reefs lying off the hard sand-bank which extends from Rás Hamár, with a channel $1\frac{1}{2}$ miles wide between, having 4 to 6 fathoms water in it, over a mud bottom: they are separated from each other by a channel $1\frac{1}{2}$ miles wide, which is reported to have closed, owing to the extension of these reefs. The north-western reef is 2 miles long, lying W. by N. and E. by S. by $1\frac{1}{2}$ miles wide, the centre of it bearing from Zeyla mosque N.E. by E. 8 miles distant. The south-eastern reef is 2 miles long, lying North and South, by $1\frac{1}{4}$ miles wide, the centre of it bearing from Zeyla mosque E. by N. $\frac{1}{2}$ N. $8\frac{1}{4}$ miles.

Between these two reefs, to the south-westward, is another small rocky patch, nearly dry at low water, about 300 yards in diameter, that bears from the mosque N.E. by E. $\frac{3}{4}$ E. distant $7\frac{1}{4}$ miles.

The soundings to the eastward of Sháb Filfil, and the shoals off them, gradually increase from 17 to 25 fathoms at a distance of 4 miles, then suddenly drop into no bottom at 40 fathoms: the bottom is all mud, with the exception of the bank off Rás Hamár, and the depths decrease gradually towards the harbour.

Seagull Shoal.—A shoal on which H.M.S. *Seagull* is reported to have struck in May 1880 has been recently examined by the officers of H.M.S. *Arab*. The north-west extreme of this danger (Seagull shoal) is in lat. $11^{\circ} 25' N.$, long. $43^{\circ} 38' E.$, the shoal thence extends $1\frac{1}{2}$ miles in the S.E. direction, has a general breadth of three-quarters of a mile, and is

* The buoys of Zeyla were placed by the Egyptian authorities; but little dependence can be placed on their being in position.

† Lieutenant W. C. Barker, Indian Navy; Journal R. Geog. Soc., vol. xviii. p. 130; and private MS.

separated from Shab Filfil south shoal by a channel which is three-quarters of a mile wide, and has $4\frac{1}{2}$ fathoms least water.

Seagull shoal is composed of sand with coral heads, having 4 to 6 feet least water, and 12 to 18 feet between; the outer edge is steep-to, the soundings in some parts decreasing from 9 to $3\frac{1}{2}$ fathoms.

Much caution is required in approaching the shoal. During the time the *Arab* was anchored on its north side it was often difficult to distinguish the shoal water, the surface being covered with minute particles of seaweed or the spawn of fish.

The flood tide sets N.N.E., the ebb, S.W.

Channel Reef.—A very dangerous rocky patch, which should be seen from aloft, about 300 yards in diameter, having on it $1\frac{1}{2}$ fathoms water at low-water springs, and 6 to 10 fathoms water all round it. An iron can buoy with a beacon lies in $3\frac{1}{2}$ fathoms water, on the North edge of Channel reef. This buoy is small and not very readily made out.

Between Channel reef and the reef off Ivát island, is the main channel $2\frac{1}{4}$ miles wide, with depths of 9 and 10 fathoms water in it; and between it and Sháb Filfil the channel is one mile wide, with depths of 6 to 7 fathoms water in it. This patch bears from Zeyla mosque N.E. $\frac{3}{4}$ N., distant 8 miles.

Ivát or **Efát** is a low sandy island, with a few stunted bushes scattered over its surface, lying to the northward of Sadaldín island. It is $2\frac{1}{2}$ miles long in a direction N.E. by N. and S.W. by S.; the western side is steep-to, having 8 or 9 fathoms water close to the beach: a reef however extends to the eastward of the island $3\frac{1}{2}$ miles; and to the south-westward $1\frac{1}{2}$ miles in rocky patches and overfalls, having a channel one mile wide between it and Sadaldín island, with 5 to 7 fathoms water in it.

An iron can buoy with a beacon is placed near the S.E. point of the reef extending eastward of Ivát island, in about 3 fathoms water.

The south-west point of the island bears from Zeyla mosque N. $\frac{3}{4}$ W., distant rather more than 8 miles. There are two rocky patches bearing from the south-west point of Ivát island as follows, viz., N. $\frac{1}{4}$ W., distant $1\frac{1}{2}$ miles, and W. $\frac{1}{4}$ S. $3\frac{3}{4}$ miles. The former has 10 fathoms water close to it on the north and west sides, and 4 fathoms between it and Ivát island. Between the latter and Ivát island the depths are 9 and 10 fathoms, and between it and the sandy spit off Rás Gomehlí, from the nearest point of which it is distant nearly $1\frac{1}{2}$ miles, there are 7 fathoms water. There is also a rocky patch, dry at low water, close to the westward of the sand-banks forming the western boundary of Zeyla harbour. Between Ivát island, Sadaldín island, and Rás Gomehlí the depths are from 5 to 7 fathoms.

Supplies.—Water is difficult to obtain, owing to the distance it has to be brought. Sheep are procurable.

ANCHORAGE.—The best anchorage for small vessels is on the north side of the harbour, in 4 fathoms water, towards the south-west point of Sadaldín island. Large vessels should anchor to the south-eastward of Sadaldín island, in $4\frac{1}{2}$ or 5 fathoms water, about 3 miles N.N.E. of the town. H.M.S. *Seagull* in October 1879 anchored in $4\frac{1}{2}$ fathoms, mud, with the mosque bearing S. by W. $\frac{1}{2}$ W. westerly, and the east extreme of Sadaldín N.W. $\frac{1}{4}$ W.

DIRECTIONS.—It is impossible to give clear directions for sailing into Zeyla harbour, there being no distinct landmarks as guides : probably the eye is the best guide, the reefs being generally, on a clear day, distinguishable from the masthead : it would not be safe to attempt the passage amongst the reefs at night, for as all have deep water close to their edges, the lead is no guide. The fair channel is to the eastward of the islands ; and the centre of the town, which is the highest part, and first seen bearing S.S.W. $\frac{1}{2}$ W. will lead in clear between the outer reefs until the south point of Sadaldín bears West, when care is necessary to avoid the small 2-fathoms bank, which lies near mid-channel, by passing a short distance on either side of it. Or, the mosque, which is difficult to distinguish, bearing S.W. $\frac{1}{4}$ S. will lead in to the anchorage, clear of all the reefs. A vessel approaching from the south-east should not shoal her water under 20 fathoms, until the mosque is brought on the above bearings.*

TIDES.—It is high water full and change at 7h. 15 m. ; springs rise $8\frac{1}{2}$ feet. The tides are very irregular, and much influenced by the prevailing winds.

The COAST from Zeyla to Jibúti, a distance of 25 miles, trends in a general N.W. direction, is low and swampy, and thickly covered with mangrove jungle, irregular in contour, with several projecting points forming bays between, fronted by a reef, dry in some parts at low water, and several small islets.

Rás Gomehlí is a low sandy point of irregular shape, being rounded on its eastern side, and projecting to the westward in the shape of a duck's bill. From the outer part of the reef, which extends a quarter of a mile from the shore, a narrow strip of sand, over which the sea washes on high tides, extend 2 miles to the north-east, then $3\frac{1}{2}$ miles to the north, surrounded by a reef of rocks, which extends to the northward of the sandy

* Great care should be displayed in entering Zeyla, as all the shoals and reefs have apparently increased.—Navigating Lieutenant R. J. Rogers, H.M.S. *Seagull*, 1879–80.

spit $1\frac{1}{2}$ miles. There is a small clump of bushes in the bend of the sandy spit, and between it and the shore reef is a narrow channel for boats at high water.

To the N.N.E., distant $3\frac{1}{4}$ miles from the extreme of the sandy spit, is a very dangerous reef, about a mile in diameter, dry in parts at low-water springs, called Sháb Túrahát, between which and the spit reef there is a channel, having irregular soundings from 3 to 4 fathoms water with a rocky bottom. Close to the reef on the northern, eastern, and western sides the depths are 10 and 12 fathoms.

To the eastward of Rás Gomehlí, on the edge of the shore reef, which here extends from the coast for a distance of 3 miles in a north-easterly direction, are three small islands covered with bushes, called Jeziráṭ Mosheikh, between which and Gomehlí spit is the small boat channel before mentioned. The outer island bears from Rás Takúsheh N.W. by N. distant nearly 4 miles.

The coast immediately to the westward of Rás Gomehlí forms a bay 5 miles wide, by 2 miles in depth, called Mersa Dalwakteah. A reef, dry at low water, extends from the shore from a half to $1\frac{1}{2}$ miles; between this reef and Jeziráṭ Dalwakteah—an island connected with the main at low water, and having a reef extending to the northward from it one mile—is a very good anchorage, with 4 fathoms water. In the depth of the bay, close to the beach, at a place called Lehadú, are some wells of good water.

In the bay formed between Gomehlí sand spit and the reef off Jeziráṭ Dalwakteah the depths are from 12 to 8 fathoms, muddy bottom. West of the northern extremity of the spit are two small dangerous rocky patches, dry at low-water spring tides, and having 10 to 12 fathoms water close to them; they are distant from the spit one and 2 miles. In the depth of the bay, and half a mile from the spit reef, is another sunken rock with 6 and 7 fathoms water close to it.

North from the centre of the Mersa or harbour, distant 3 miles from the shore, is a reef about 600 yards in diameter, dry at some parts at low water, called Moidubis Seghír; this reef is situated one mile from the shore reef, having 8 and 9 fathoms water between them.

The channel between Moidubis Seghír and Dalwakteah has 7 to 8 fathoms water in it, but it is not safe, there being a small patch with about one fathom water nearly in mid-channel. At 2 miles N.W. $\frac{1}{2}$ W. from Moidubis Seghír is another reef 350 yards in diameter, dry also at low water, called Guttatella Ousal; between these two reefs the depths are 11 and 12 fathoms.

Moidubis Kabir, another and more extensive reef, being $1\frac{1}{2}$ miles long, lying N.N.W. and S.S.E., by three-quarters of a mile broad, bears

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from Moidubis Seghír N. by E., with a channel between $1\frac{1}{4}$ miles wide, having 13 fathoms water in it, over a mud bottom.

The coast from Dalwakteah to Jibúti is fronted by a reef of rocks, dry in most parts at low water, varying in breadth from a half to $1\frac{1}{2}$ miles, and several small rocky islets; the edge of the reef is steep-to, there being from 5 to 8 fathoms water close to it.

RÁS JIBÚTI is a low rocky point, projecting to the northward from the coast $2\frac{1}{4}$ miles, off which is a coral island, about 35 or 40 feet high, of the same name, connected with the point at low water, and is the south point of the entrance to Tejúreh bay. A reef extends to the westward of the island $1\frac{1}{2}$ miles; and to the south-westward are two other reefs, dry at low water, between which and the reef extending from the cape is formed Jibúti harbour, of about one mile in extent, with a clear space of three-quarters of a mile in diameter. There are also three shoal patches to the north-westward of the harbour, bearing from Jezírat Jibúti as follows, viz.: one dry in parts at low water, N.W. $\frac{1}{2}$ N. distant 4 miles; a small 2-fathoms patch N.W. by W. $\frac{1}{2}$ W., distant 3 miles; and a small 2-fathoms patch W. by N., distant 4 miles.

MUSHAHH ISLANDS are a group of coral islands, from 30 to 40 feet above the sea, lying on a coral reef extending N.E. and S.W. 7 miles, by $3\frac{1}{2}$ miles in breadth. There are three islands, and five small rocky islets, situated nearly mid-channel between the Essah and Danákeli coasts, dividing the entrance to Tejúreh bay into two channels. The north channel is 7 miles wide, perfectly free from danger, having no soundings in it from 40 to 160 fathoms. The islands are dangerous to approach, being surrounded by coral reefs, dry in many parts at low water to a distance of $1\frac{1}{2}$ to 2 miles. The soundings to the eastward of the islands are very irregular, with overfalls, for a distance of $4\frac{1}{2}$ miles. Between the islands and the Essah coast the soundings are regular from 17 to 20 fathoms, with a mud bottom, excepting the reefs north-westward of Jibúti and off Dalwakteah.

The islands were ceded to the British by the Sultan of Tejúreh, and taken possession of on the 31st August 1840.

Anchorage.—There is a tolerable anchorage in 6 to 9 fathoms water, mud bottom, in a gap in the reef, bearing from the N.E. extreme of Mushahh island which is the north-easternmost of the group N.W. $\frac{3}{4}$ N., rather more than half a mile distant. A good look-out is necessary on entering this anchorage, as there are several rocky patches detached from the reef, and one of 2 fathoms lies nearly mid-channel. It affords good shelter at all seasons. The westernmost island is called Maskáli.

The Zeyla Bank of soundings from Zeyla to the Mushahh islands extends from the shore an average distance of 14 miles, and the soundings—with the exception of the numerous reefs noticed above—increase gradually from the shore to 20 and 25 fathoms at that distance, over a mud bottom, when a narrow ridge of 14 to 20 fathoms occurs, and suddenly falls into no soundings at 40 to 50 fathoms, beyond which depths no soundings have been taken.

The COAST.—From the bottom of Jibúti harbour the coast takes a direction W. $\frac{1}{2}$ N. a distance of 10 miles to Khór Ambádú thence W. by S. to the entrance of Ghubbet Kharab. For the first 5 miles, as far as Mersa Manga Daffa, a small boat anchorage, it is low and swampy, when it assumes a steep, bold, precipitous character, being formed of cliffs rising 400 and 500 feet above the level of the sea. At Manga Daffa the mountains again come close down to the sea, and skirt the coast as far as the entrance to the Red sea.

Khór Ambádú is a stream of fresh water, off the entrance to which is a very good anchorage in from 12 to 15 fathoms water, formed by a reef of rocks running out at right angles to the coast to a distance of three-quarters of a mile, which affords protection from easterly winds. To the north-westward of the khór, distant half a mile, is a shoal patch of 2 fathoms, between which and the shore are 12 and 14 fathoms water, over a sandy bottom, and between it and the reef to the eastward is a channel rather more than a quarter of a mile wide, having 15 fathoms water in it. In the event of a vessel watering at the khór, it would be prudent to have the watering party armed to protect themselves from the natives.

From Khór Ambádú to Ghubbet Kharab, a distance of 17 miles, the coast is steep-to, there being from 20 to 50 fathoms water close to the cliffs, thereby affording—with one or two exceptions—no anchorage. There appears to be no bottom found at from 25 to 60 fathoms right across the gulf, except immediately near the coast on either side.

The coast line is slightly irregular, jutting out into small points, to the westward of one of which, Rás Eiró, there is a small bay, with 12 fathoms water close in to the cliffs, where shelter may be found from easterly winds. There is a moderately good anchorage immediately outside Ghubbet Kharab, on the Essah coast, in 17 fathoms water, mud bottom, half a mile from the shore, protected from easterly winds by a small rocky islet, which is separated from the mainland by a narrow boat channel, and extends north from the coast three-quarters of a mile.

Inhabitants.—The coast from Karangarít to Khór Kharab is inhabited by wandering parties of the Essah Somális; they are a powerful tribe and said to be very numerous, and are much feared by the Danákeli

tribe, inhabiting the opposite side of the gulf, who describe the Essah as a race of treacherous thieves and murderers; they have however always been found to be an inoffensive people in their dealings with Europeans, except in a few instances, when probably some cause of offence was first offered by the stranger. It would be nevertheless prudent to be very cautious in all dealings with them, to avoid giving offence, especially in regard to their religious scruples. They are followers of Mahomet. Their arms are the spear and shield, bow and arrow, in the use of which they are said to be very expert, especially the latter, with which they shoot the elephant, ostrich, zebra, and indeed all kinds of animals; the barb of their arrow is poisoned, with some vegetable composition, which, when fresh, causes death a few hours after wounding. They are rich in cattle; bullocks, sheep, and goats are very cheap; their camels are large, the price of a full grown one is equivalent to 7 German crowns; a horse is equal to 3 camels. The sea-coast is very barren, but the interior is said to be very fertile. The produce of the country is taken to Zeyla, where it is exchanged for coarse white and blue cloth, tobacco, &c., the Arab merchants of the town profiting greatly by the exchange. They do not know the value of money, but are very fond of ornaments, false pearls, beads, looking-glasses, &c. They are, generally speaking, a very tall race, the men averaging 6 feet in height, and the women 5 ft. 8 in. to 5 ft. 10 in. Most of them are partial to red hair, and dye it that colour; those who are not blessed with a good head of hair wear wigs made of sheep skin. They never wear turban or head-dress of any kind. A man who kills another in fair fight, is allowed the privilege of wearing an ostrich feather in his hair.

GHUBBET KHARAB is an extensive basin of irregular shape, 13 miles in length by 6 miles in breadth, lying N.W. by W. and S.E. by E., and situated at the western extremity of the gulf of Tejúreh. The northern and southern shores are formed of precipitous limestone cliffs, from 400 to 2,000 feet above the level of the sea, in which are deep ravines. The western shore is volcanic, and the valley is strewn with lava and volcanic remains. In the deep ravines are large masses of rock, and trees of considerable size, torn up by the roots, lying in the direction of the ravine, evidently borne down by mountain torrents.

The entrance to the bay is narrow, the distance across being only three-quarters of a mile, which is divided into two channels by a rocky islet about 40 feet high, named Bab or Gate. The southern channel, 350 yards wide, has $3\frac{1}{2}$ fathoms water in it, over a rocky bottom. The northern channel is only 40 yards wide, but the water is deeper, there being 17 fathoms in its shoalest part. The tides rush through these

channels with great rapidity, causing whirls and rippings, giving the place a very dangerous appearance, especially to a stranger. The depth in the centre of the bay is 105 fathoms, and the cliffs on either side are very steep-to, there being 85 fathoms water close to the northern shore, thus affording no anchorage for a vessel. The deepest water is in the south-east part of the bay, there being 115 fathoms with the shore equidistant North and South three-quarters of a mile.

At the western extreme of the bay is a small basin about 300 yards in diameter, surrounded by precipitous volcanic cliffs, and having 16 fathoms water in it. The entrance to it is completely closed at low water by a ridge of rocks; the water is always running from it, even during flood tide, and the natives have an idea that it is connected by subterranean means with the Bahr Assal, or salt lake, but no signs of communication are to be observed, nor is the water at all agitated.

The whole of the western side of Ghubbet Kharab, as before mentioned is volcanic; but, from the appearance of the lava, it must be a very long time since there was any eruption. The lava extends to a distance of 2 or 3 miles inland to the foot of a range of sand-hills, which are elevated 200 or 300 feet above the plain. From the summit of these hills, Bahr Assal, or the salt lake, may be seen to the north-westward, distant 5 or 6 miles. This lake is said to supply all Abyssinia with salt.

It is a remarkable fact that the mud brought up by the sounding lead, even at the depth of 105 fathoms—after scraping off the outer coating—is perfectly fresh to the taste, notwithstanding that the water at the surface is exceedingly salt, so much so, as to be painful to the eyes when used for bathing purposes.

At the western end of the bay is a precipitous inaccessible island, called Búd Ali, about 300 feet high, of a reddish white appearance, apparently thrown up by some convulsion of nature; the sides are thickly coated with a kind of vegetable matter and earth mixed together: and N.N.W. of it is another island of nearly equal height, entirely volcanic, the course of the lava being plainly perceptible down the sides of it. On the mainland, close to Búd Ali, is the mouth of an exhausted crater, about 100 feet in diameter, and apparently 300 feet deep.

Besides the above-mentioned islands are two others, one called Had Ali, bearing from Búd Ali S.E. $\frac{3}{4}$ S., distant 3 miles; the other a mere dry rock on the Danakeli coast having a narrow channel between it and the shore, with 10 fathoms water in it, mud bottom, and bearing from Had Ali N.N.E. distant $4\frac{1}{2}$ miles.

At $1\frac{3}{4}$ miles from the entrance to the bay, and on the Danakeli coast, is an indentation in the coast, rather more than a mile deep, and half a mile wide, having 8 to 10 fathoms water in it; there are

an islet and a sunken rock in the entrance, which reduce the passage to a quarter of a mile in width.

Temperature.—The heat in the bay is excessive ; the range of the thermometer in the shade, during a period of 6 days in September, was from 92° to 110° Fahrenheit.

The COAST.—The direction of the coast line from the entrance to Ghubbeṭ Kharab to Tejúreh, a distance of $16\frac{1}{2}$ miles, is N.E. $\frac{1}{2}$ N., slightly concave. It is bold to approach, there being 10 to 15 fathoms water close-to, and immediately outside 30 and 40 fathoms. The high mountains approach close to the sea until within 9 miles of Tejúreh, when they recede about 3 miles, approaching the sea again 6 miles to the eastward of Tejúreh. The highest part of these mountains, called Jebel Gúdeh, is tabular, and 3,000 feet above the sea ; on the eastern extreme are two small peaks, the western of which bears W. 6° 30' S. (true) from Tejúreh, distant 11 miles. The mountains are thickly covered with trees, those on the summit appear to be very large.

Just outside Ghubbeṭ Kharab, and on the Danákelí coast, are some ruins ; and below the high-water mark is a hot spring issuing from beneath the rocks ; at high water there is no sign of it, but at low water it is so hot, as to instantly destroy crabs and other fish thrown into it.

The Coast from Ghubbeṭ Kharab to the entrance of the Red sea is inhabited by the Danákelí tribe, whose territory extends inland to the borders of the kingdom of Shúah. They probably exceed 5,000 in number, and are subdivided into several smaller tribes, viz. : the Abd-Ali, the principal, to which the sultan belongs ; the Abli ; the Debenk ; and the Rúkbeh. Their religion is Mahomedan, but they are not strict observers of their creed. They are all armed with spears, shields, and krises, some few have swords, and near the coast a few have firearms. Opinion seems to be divided as to the character of these people ; by their neighbours they are held in great disrepute, being considered cruel, treacherous, and inhospitable, in the same manner as they themselves hold the Essah Somális to be murderous thieves. Europeans who have visited the coast have always been received with great civility, possibly owing to their being armed ; but the probability is, that if treated kindly, and their prejudices respected, they in return will act civilly.

Ambábú.—This small village consisting of about 30 huts, is situated in a grove of trees in a little bight of the coast, 4 miles to the south-westward of Tejúreh, where good fresh water may be procured, but the anchorage is very unsafe, there being no protection or shelter, and the soundings not extending more than half a mile from the shore. Navigating Lieutenant G. S. Keigwin of H.M.S. *Arab* recommends anchoring off

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Ambábú in 12 to 14 fathoms, mud, with the village bearing N.N.W., there is 3 to 4 fathoms close to the beach.

TEJÚREH, the seaport of the Danákelí, is a village consisting of about 100 huts, which range close to the sandy beach, and at the extremes of the village are two coral built white houses, the western of which is used as a mosque; the village containing about 500 inhabitants. It is governed by the chief of the Danákelí tribe, who assumes the title of Sultan.*

The natives from the interior assemble here annually about the months of January and February for the purpose of trade, bringing with them gums, skins, ivory, myrrh, ostrich feathers, coffee, and a large supply of cattle. The above-mentioned produce is exchanged for coarse blue cloth, red cloth, salt, frankincense, brass, lead, zinc, &c., with which they return to Abyssinia. Kafilahs are passing to and fro throughout the year. There were a few small trading boats belonging to Tejúreh, the largest of which did not exceed 70 tons burthen; they trade with the ports of 'Aden, Mokha, Zeyla, and Berbereh, and sometimes, though very seldom, go as far as Jiddeh.

Tejúreh, Ambábú, and Obokh are the only three villages on the whole extent of coast between Ghubbet Kharab and the entrance to the Red sea. Occasionally scattered parties of the Danákelí tribe may be found, but they have no permanent villages; it is when pasture is scarce in the interior that they drive their flocks down to the coast.

The harbour is formed by a gap in the shore reef which here extends about 200 yards off shore, immediately outside of which there is no bottom found at a depth of 40 fathoms. There are 10 fathoms water in the harbour, but the anchorage is exceedingly unsafe, with barely sufficient room for a vessel to swing. It is only during easterly winds that the native boats can lie there; during the south-west monsoon it is extremely dangerous.

Navigating Lieutenant W. Strugnell of H.M.S. *Philomel* in November 1880, describes Tejúreh harbour as being of horse-shoe shape with an entrance one cable wide in an E.S.E. and W.N.W. direction; having depths of 10 to 14 fathoms in it. The *Philomel* moored at the entrance with bower anchor close to the east side of entrance in 11 fathoms, and the stream anchor out astern close to the breaking reef in 9 fathoms.

* At the back of the village on an eminence is a rude fort with walls round it. In 1880 the fort was kept by an Egyptian officer with about 80 troops. The troops have procured very good water by sinking wells about 10 feet deep in their garden.

Anchorage.—The best anchorage off Tejúreh is in 14 fathoms about half a mile outside the reef which forms the harbour, with the centre of the town bearing N.N.W.

Khór Rás Ali, a narrow basin, or inlet of the sea, three-quarters of a mile in length, is situated $3\frac{1}{2}$ miles to the eastward of Tejúreh, having 6 to 7 fathoms water in it, with a mud bottom, and affording shelter from all winds; there is however a rocky bar across its entrance, with only 9 feet water on it at high water. During the south-west monsoon this anchorage is made use of by small native boats.

The COAST from Tejúreh runs east $5\frac{1}{2}$ miles to Rás Ali, being slightly convex, and is fronted by a reef of rocks, extending 200 to 300 yards from the shore, immediately outside of which there is no bottom to be found at a depth of 17 fathoms. The shore is sandy, rising gradually towards the mountains in the interior.

The coast between Rás Ali and Ras Dúán (bluff), a distance of $4\frac{1}{4}$ miles in an east-north-easterly direction, forms a curve or bay $1\frac{1}{4}$ miles deep, called Mersa Dúán. The shore is fronted by a reef half a mile in extent in which is a gap, with soundings in it of from 12 to 20 fathoms, affording good anchorage and shelter during the south-west monsoon,—being protected by the reef, which is dry in some parts at low water, projecting from Rás Ali,—when it is used by large natives boats. It is not a good anchorage during the north-east monsoon, or when easterly winds prevail. There is a well-worn path between it and the village of Tejúreh. Immediately outside the reef there is no bottom to be found at 17 fathoms, or at 30 fathoms within half a mile. In the eastern part of the bay, immediately at the base of the tabular cliffs forming Dúán bluff, and distant from the beach three-quarters of a mile, are three wells; two of them are cold springs of excellent water, the other is a hot spring, of a temperature of about 100° Fahrenheit.

RAS DÚÁN is an abrupt precipitous cliff, 500 to 600 feet in height, at the eastern extreme of Mersa Dúán. From this point, the coast as far as Jebel Ján has not been surveyed, but laid down from a sketch made while running along it; there appear however to be no dangers: the coast is bold, with no soundings at 30 fathoms at a distance of $1\frac{1}{2}$ miles off the bluff. From Ras Dúán its direction is N.E. $\frac{1}{2}$ E. for a distance of $5\frac{1}{4}$ miles, where it forms a slightly projecting bluff point, from which to Rás-al-Bír, bearing about E. by N., distant $17\frac{1}{2}$ miles, it is concave, forming a bay 3 miles deep. For 17 miles from Ras Dúán the shore is a precipitous cliff, the mountains approaching close to the sea; these mountains are thickly clothed with trees, and the valleys appear to be very

fertile. From this point the shore becomes low and sandy, and the mountains recede from the sea, approaching it again at Jebel Ján.

ANCHORAGE with winds off the land may be had in 16 fathoms, one mile off shore, 5 miles to the westward of Obokh. Native vessels resort to this anchorage.

OBOKH.—This village, situated in an indentation in the coast, about $4\frac{1}{2}$ to 5 miles to the westward of Rás-al-Bír, has two or three coral reefs off it, at a distance of $1\frac{1}{2}$ miles from the shore; these reefs are steep-to, having 30 fathoms water close to them. The points of the reefs are not easily seen at high water. The mangrove bushes and the rocks off cape Obokh which show black, serve to point out this place from the offing. The cape itself is not seen well until close in.

Anchorage.—In a gap between the reefs there is tolerable anchorage in 15 fathoms water, half a mile from the shore, with cape Obokh W. by S. 8 cables, protected from all winds except the S.W., from which quarter very strong winds blow at times, rendering the place very dangerous. The edges of the reefs are not readily seen, but the passage in to the anchorage is easy when they are seen. The eastern extreme of the mangrove bushes, where they join the beach N. $\frac{1}{4}$ E. will serve to find the channel and lead between the reefs.*

RÁS-AL-BÍR, a sandy point, 20 feet high, difficult to distinguish at night from its pale colour, is steep-to, there being no soundings at 30 fathoms within half a mile. It forms the north point of the entrance to the gulf of Tejúreh. From Rás-al-Bír the coast takes a direction north, as far as Jebel Ján, being slightly convex to the eastward; it is low and sandy, and between it and the mountains is an extensive plain covered with mangrove and brushwood. At a distance of $2\frac{1}{2}$ miles from the shore, there are from 12 to 15 fathoms.

JEBEL JÁN is the highest of three or four ranges of tabular mountains, which reach a great elevation, and approach close to the sea. It is distant from Rás-al-Bír about 18 miles.

The direction of the coast between Jebel Ján and Jebel Siján is N.N.W., and the distance 13 miles. The shore is low, sandy, covered with jungle, and fronted by a rocky reef extending from one-half to three-quarters of a mile from it. The soundings are regular, increasing gradually from the shore, the 20 fathoms line being distant about 3 miles, and the 100 fathoms

* See plan of Obokh on Admiralty chart No. 253 a; scale, $m=3\cdot5$ inches.

In November 1880, Commander H. R. Berners, H.M.S. *Philomel*, says, "There are no houses, but one Frenchman was living in a hole in the rocks, attended by two native servants."

line 8 miles. There are two khórs or creeks running in from the sea, at the distances of 4 and 6 miles from Jebel Siján. The southernmost, Khór Angar, has a small islet close to the northward of the entrance.*

RÁS SIJ'AN, forming the southern point of the entrance into the Red sea, is a gloomy-looking volcanic headland, the peak being about 380 feet above the sea, projecting to the northward from the coast, with which it is connected by a piece of low land 700 yards wide, having a swampy bay, surrounded with mangrove bushes, to the westward. The northern face of the cape is rocky and steep; but, from a small bay to the eastward, a bank runs out about a mile, with from 5 to 6 fathoms water on its outer edge.

JEZÍRAT SAB'AH, or the BROTHERS, by which name they are more commonly known, are a group of six rocky islets, extending $5\frac{1}{4}$ miles in an East and West direction, the highest or north-eastern islet lying due East of Jebel Siján, and $9\frac{1}{2}$ miles South of the southern point of Perím island. The western islet is $2\frac{1}{4}$ miles from the coast, and the eastern $7\frac{1}{4}$ miles. The channels between them are safe; depths varying from 6 to 25 fathoms. The tides are rapid and irregular. The anchorage is good.

The islets are of a brownish colour, the westernmost being certainly volcanic. They are of considerable height, and five of the six of them may be seen, in clear weather, at a distance of 20 to 30 miles. The north-eastern islet is about 350 feet high; the westernmost 200 feet, and the second from the westward 250 feet. The highest forms a conspicuous peak, and on the north side is a bay, abundantly supplied with turtle and various kind of fish. A low rocky islet to the westward, is the only part that may be considered dangerous.

* See Admiralty chart, Arabia, S.E. coast, No. 10 a; scale, $m=0.1$ of an inch.

CHAPTER IV.

ARABIAN COAST, FROM THE STRAIT OF BAB-EL-MANDEB
TO MAKALLEH.*

VARIATION in 1882.

'Aden $3^{\circ} 40'$ W.

|

Makalleh $2^{\circ} 22'$ W.

The **STRAIT of BAB-EL-MANDEB**, at the entrance into the Red sea, is formed by Rás Siján on the Abyssinian shore, and Rás Bab-el-Mandeb on the Arabian shore, the distance from point to point being $13\frac{1}{2}$ miles. This is divided into two by the island of Perím.

The **North or Small Strait** formed between Perím and Sheikh Malu or Oyster island—a small rocky islet, one cable distant from the shore of Rás Bab-el-Mandeb—is $1\frac{1}{2}$ miles in breadth, in which there is no danger, the soundings varying from 7 to 16 fathoms, irregular in the centre and on the Perím side, but on the north side to the N.W. of Oyster island regular, with sandy bottom.

The **South or Large Strait**, formed by the south point of Perím and Jebel Siján, is 11 miles in breadth, channel perfectly safe, there being deep water right across, and in the middle of the strait the depths are from 100 to 185 fathoms. On the Perím side, a bank extends to the distance of 3 miles off the island, having from 40 to 60 fathoms water on its outer edge, gradually shoaling to 20 fathoms close to the island. This bank is connected with that running along the Arabian coast, which suddenly deepens into 150 to 180 fathoms. The strait is narrowed by the cluster of islets, before described, called Jezírat-Sab'ah, or The Brothers, the highest or north-eastern being $9\frac{1}{2}$ miles South of the southern point of Perím island.*

PERÍM or MEYŪN,† is a bare rocky island, rather flat in appearance, about $3\frac{1}{2}$ miles long by $1\frac{3}{4}$ broad, rising at its highest part to 214 feet above the sea; it has a good harbour at its south-western side, with an entrance half a mile in width, with no dangers. There is no fresh

* See chart, S.E. and N.E. coast of Arabia, No. 10 a; scale, $m=0.10$ of an inch.

† See plan Perím island, No. 2,592; scale, $m=4$ inches.

water to be found on the island, the water used is obtained by means of a condenser. Perím is uninhabited except by a small detachment of troops, who are entirely dependent on 'Aden for supplies of every description. Turtle may be caught on the shores of the harbour during the season when the females land to lay their eggs.

A bank of 16 feet and less extends off Rás Sheikh Berkúd, the north point of the island, half a mile, with 4 and 5 fathoms on its outer edge; it commences at the north-east part of the island, gradually increasing to the north; from thence it slopes away to the island, and ceases at the north-west part.

Azalea rock.—At $1\frac{1}{2}$ cables E. $\frac{3}{4}$ S. from Azalea point, east side of Perim, is Azalea rock, having a depth of 12 feet, and 4 to 5 fathoms close to all round. From this rock, on which the steam ship *Azalea* was wrecked in the year 1873, Perím island lighthouse bears N.W. by N.

Perím Harbour, on the south-west side of the island, is divided into two branches, each about 8 or 9 cables long. One branch extends to the N.W., and the other to the N.N.E. The entrance, which is half a mile broad, has a depth of $6\frac{1}{2}$ to 12 fathoms, extending to within half a cable's length of each side. The north-east arm is considerably obstructed by shoals; the north-west one is better to anchor in, as it is clearer. Anchorage may be obtained in it in 5 or 6 fathoms, sand and coral bottom, with plenty of room for a ship to swing. For sailing vessels there is a difficulty in getting out of this place in south winds, and warping out might be found necessary.

LIGHT.—A lighthouse has been erected near the eastern peak of the island, its elevation being 249 feet above the sea, visible 22 miles; it shows a white light, which *revolves once every minute*; but within a distance of 15 miles the light has sometimes appeared to be continuous: being close to the eastern shore of the island, it is an excellent guide to vessels passing through the Small strait. The lighthouse and buildings are enclosed by a loop-holed wall.

TIDES.—It is high water, full and change, at Perím and in the strait generally, at 8h., springs rise 5 feet, neaps 3 feet. The flood sets N.W., ebb S.E. The tides are very irregular both in period and velocity; sometimes in the centre of the strait there is very little ebb, while at others, particularly at night, on full and change, it runs at the rate of 4 miles an hour, creating a strong ripple when opposed to the wind. In the channels the tides greatly depend on the preceding winds; after a fresh north-wester the flood will run for 16 hours, and vice versâ after a south-easter; the water at the same time ebbing and flowing on the beach with great regularity.

DIRECTIONS.—In passing the strait with a fair wind, the nearest course would naturally be adopted, but the north or Small strait is

the most desirable, and is the most usually frequented, having moderate depths for anchoring, in the event of the wind falling light or calm. Bring Perim light to bear S. $\frac{1}{2}$ E. in order to clear the shoal ground off the north side of that island, and then steer to pass about 3 or 4 cables distant from the east side of Perim.

The island or Perim shore in this channel is recommended, as Oyster rock on the opposite side is low, and at night is difficult to distinguish when approached from the northward, as higher land is in the background; but when approached from the south-east, it shows out well against the horizon, and can be kept in view until nearly abreast of it. The eye is the best guide, getting the centre of the channel on a S.S.E. or N.N.W. bearing, and then keeping, as before remarked, the Perim side on board, which latter may be safely approached to 3 cables.

If a vessel has to work through, the Small strait is in like manner the most preferable, there being good anchoring ground all over it, in 8 to 16 fathoms, the tides being more certain, and in the event of accident, there being good anchorage on either side of Rás Bab-el-Mandeb, where shelter may be obtained.

There is no anchorage in the Large strait, except near Perim island, the westernmost of the Brothers, and Rás Siján; with a fair wind however, the Large strait may be adopted, and probably a stranger would prefer it, as having more room, and therefore safer to pass through at night, but with the light on Perim island there can be no danger in either channel; should the Large strait be used, care should be taken to keep well over towards Perim, where anchorage may be obtained should the wind fail, to prevent being drifted over to the Brothers when the current is setting to the southward.

During the strong southerly gales which blow in the Red sea in the months of December, January, and February, vessels should never attempt to work down to the strait, but should wait for a lull, and then work with the tides, day and night, anchoring close in-shore on the flood.

Vessels entering the strait during north-westerly winds, should work off and on the Arabian coast in soundings, anchoring on the ebb, if found too strong to work over. At night the soundings are an excellent guide, and a vessel working between 15 and 35 fathoms, could not miss the Small strait, the edge of the bank off shore being very precipitous.

Vessels on the Arabian coast, between 'Aden and the strait, in the months of June, July, and August, will often experience thick hazy weather; if the wind is from the N.W., fresh gusts of winds may be looked for, especially in-shore; and sometimes the wind will change quite

suddenly, and blow fresh from the South. During these months it is very necessary to have good sails bent, and care should be taken to be on the bank of soundings at the turn of tide, to enable a vessel to anchor in shallow water, should it fall calm, or the current be too strong for her. On the African coast it is equally necessary to have good sails bent, as the gusts from the shore are, at times, very violent. See page 12.

With ordinary precaution there is no danger; but a good look-out, the lead, and night observations are requisite. The only real dangers in the gulf of 'Aden are the reefs off Zeyla, on the African coast, and the bank of broken ground between Rás 'A'rah and Rás Ka'û on the Arabian coast, which extends from the shore 2, 3, and 4 miles; off this latter bank a vessel should not stand in under 15 fathoms by day, and 20 fathoms by night, the water shoaling very suddenly. In the day-time the edge of the reef is plainly perceptible.

ASPECT.—On approaching the strait from the eastward, a small peak will first be seen at a distance of 25 to 30 miles in clear weather; on nearing, others gradually rise till they become united; this is the land about Rás Bab-el-Mandeb.

At the distance of 15 to 20 miles Perím will be seen from the deck, to the southward of the peak first seen. On rising it appears low, gradually sloping from the centre to the extremes; its outline is even and unbroken, and, cannot be mistaken for the high land of Bab-el-Mandeb, which has many irregularities, with the peak of Manhalí, or Quoin hill.

RÁS BAB-EL-MANDEB, or the cape of the Gate of Affliction, is a prominent cape, which forms the south-western extremity of Arabia, and the north-eastern shore of the entrance into the Red sea. When seen from the eastward the land assumes the shape of a wedge, or gunner's quoin, and is visible from a vessel's deck, on a clear day, at a distance of 35 miles. Its highest peak, named Jebel Manhalí, or Quoin hill, rises to 886 feet above the sea, whence it slopes to the southward, and terminates in a low point on the sea. Off the extremity of the cape numerous rocky points project about half a mile from the shore, which form shallow bays, affording shelter to boats and small vessels; and here the traders from the opposite coast of Africa land their sheep, and drive them to Mokhá, to avoid a tedious voyage back against southerly winds.

About $1\frac{1}{2}$ miles to the north-eastward of Jebel Manhalí is a small range of hills, named Jebel Heikah, extending about 3 miles in a N.N.W. direction, of less elevation, and an irregular outline: the intervening land is low, sandy, and barren. A little to the eastward of the cape is a square dark hill, named Turbah, on which are some ruins, and an old village: the

steep rocky points here form a sheltered anchorage. Jebel Manhalí, and the other hills adjacent, are of volcanic origin : on the summit the needle was deflected several degrees from the magnetic meridian.

Water.—There is a well of brackish water in the largest valley close by.

Sheikh Malu or Oyster island is a small rocky islet lying off the cape, a cable from the shore, it is also called Pilot island.

There is sheltered anchorage during north winds in 6 and 7 fathoms water, in a small bight E. by S. of the island, and about 2 or 3 cables from it.

Ras Sheikh Syed, the northern and lower cape of Bab-el-Mandeb is only 15 feet in height, at about one mile N. by W. of Oyster island; during south winds vessels can anchor in 6 or 7 fathoms water, with Oyster island seen over it.

GHUBBET el HEÏKAH.—The coast from Rás Bab-el-Mandeb extends in a north-easterly direction about 7 miles, when it turns abruptly E.S.E. for about 25 miles, as far as Rás 'A'rah, forming in the bight the bay of Ghubbet el Heïkah, which has low and sandy shores, and affords a convenient and smooth water anchorage for vessels working towards the strait against the strong north-westerly winds in June and July. A ship standing into this bay should not approach nearer than 10 fathoms by day, or 14 fathoms by night, to avoid the 3 and $3\frac{1}{2}$ fathoms' patches, which are outside the reef, about a mile from the shore. The bank of soundings extends to 12 or 14 miles off this part of the coast.

Along this coast are small projecting rocky points, forming little bays, with a low sandy beach; towards the interior the land, as it rises towards the hills, is covered with bushes.

ASPECT.—Inland to the north-eastward, distant about 8 miles from the coast, is a range of hills, named Jebel Hejáf, extending for about 16 miles in the same direction; they are of a dark aspect, irregular in their outline, and terminate in a bluff to the westward. Behind these hills is a remarkable range of lofty mountains, named Jebel 'A'rah, better known by the name of Chimney peaks, from their irregular and peaked outline; these mountains when seen from a great distance have sometimes been mistaken for Ras Bab-el-Mandeb; they extend in a N.W. by N. direction for about 18 miles, and terminate to the S.E. in a barn-shaped hill, with a peak in the centre; they have a dark gloomy aspect, and are bounded to the north by a higher range of distant mountains.

Water.—At Sekeyyah is a group of palm trees, and 2 miles to the eastward is a well of good water; wood fuel is abundant.

RÁS 'A'RAH, the southern cape of Arabia, is a very low, sandy, rounded point, difficult to distinguish at night, and is one of the most

dangerous capes on the coast, being in the direct route for vessels proceeding to or from the Red sea, and having a bank of hard sand extending nearly $3\frac{1}{2}$ miles off shore to the south-eastward of it, with one or two dangerous rocky patches with only 6 feet of water. Several vessels have been wrecked on it. This bank, which extends as far as Khór 'Amrán, is the more dangerous, as the water suddenly shoals from 15 fathoms; and a ship with good headway would hardly have time to get a second cast of the lead before touching the ground: it is advisable not to approach nearer than 15 fathoms by day, and 20 fathoms by night.*

Water.—There is a supply of fresh water in this bay near a grove of date trees.

CAUTION.—The natives on this part of the coast should be avoided, being of a hostile and ferocious character.

ANCHORAGE.—There is good anchorage in the small bay to the westward of Rás 'A'rah, affording shelter against the strong winds during the N.E. monsoon: the coast immediately round the bay is rather steep.

Khór 'Amrán, is a remarkable inlet, situated $13\frac{1}{2}$ miles E. by N. from Rás 'A'rah, $4\frac{1}{2}$ miles long from East to West, by $2\frac{1}{2}$ broad: it is almost land-locked by a narrow spit of sand which projects from its eastern shore, and forms its southern boundary, leaving a very narrow entrance to the westward, with only 6 feet water; this depth does not increase for 2 miles, being in some places more shallow, when it opens out into a fine basin, with 3 to 6 fathoms at low water; at high water the low southern spit of sand is nearly covered.

Jebel Kharaz, or the Highland of Sant' Antonio, reaches the height of 2,772 feet above the sea at its northern peak, while its southern bluff rises 2,085 feet almost immediately to the north of Khór 'Amrán. On the western side of the summit of the north peak, is a ruin of roughly hewn stone, without date or inscription, but sufficiently remarkable to give a name to the mountain amongst the superstitious natives, by whom it is called Jebel Jinn, or Genii hill, on account of some mystery attached to the building. The mountain is composed of limestone and granite, chiefly the former.

* The French transport *Le Rhin*, in the year 1872, reported having sounded in 8 to 10 fathoms on a bank which is about 8 to 10 miles long north and south: the northern end being in lat. $12^{\circ} 30' N.$, long $40^{\circ} E.$ (approximate), or about 6 miles to the south-east of Rás 'A'rah.

In the year 1880, H.M. surveying vessel *Flying Fish* anchored near the centre of the supposed bank, and carefully sounded round the neighbourhood but failed to find the bank; the shoalest sounding obtained within an area of 8 miles in diameter being 20 fathoms.

RÁS KA'Ú, 68 feet high, is a projecting cape, lying 17 miles E. by N. of the entrance to Khór 'Amrán, and from its dark appearance is known by the name of Black cape. At 3 miles inland to the N.N.W. is the remarkable saddle hill, named Jebel Ka'ú, rising 798 feet above the sea, three other small hills occur to the south-west of it near the coast.

Dangers.—Between Khór 'Amrán and this cape, a very dangerous sand-bank extends, at one point reaching 4 miles off shore: no vessel should approach nearer than 15 fathoms by day, and 20 fathoms by night, and even then great attention must be paid to the lead; for although the limit of the bank may sometimes be seen from the masthead of a vessel, much caution is *always* necessary in approaching this part of the coast, as the water shoals very suddenly. On some parts of the bank, the water breaks at low-water springs. The bank of soundings extends 20 miles from the shore, there being 125 fathoms water at that distance.

The COAST.—The whole of this coast from Rás A'rah is low and sandy, with a few bushy shrubs, while here and there a rocky point occurs.

The coast to the eastward of Rás Ka'ú is still flat and sandy for a distance of 18 miles, as far as Rás 'Amrán, forming Bander Amrán, a bay nearly 5 miles deep; the land towards the interior is low and flat, and covered with bushes. The soundings in the bay are regular, there being 12 and 13 fathoms 2 or 3 miles off shore, and there are no dangers; the bottom is principally clay and sand, with an occasional patch of rock.

ANCHORAGE.*—There is excellent shelter from easterly winds in Bander Amrán under Rás 'Amrán, which cape forms the eastern boundary of the territory of the Subeihí tribe; these people, though numerous, numbering about 12,000 persons, are little known; their natural character is kind and friendly, but the cruel treatment they have received from their hostile neighbours has made them suspicious of strangers, revengeful, and treacherous.

RÁS 'AMRÁN is the S.W. extreme of a small rocky island, divided from the mainland by narrow channels, almost filled up with rocks; off its western side are three small rocks of considerable elevation, with deep water close outside them. The cape of the mainland is a rocky promontory, rising 712 feet above the sea, which projects, including the island, $2\frac{1}{2}$ miles in a S.S.W. direction from the general line of coast, and forms the western limit of Bander Feikam, the bay which lies to the eastward.

BANDER FEİKAM is a bay about 5 miles broad, by 2 miles deep, formed by the projecting land of Rás 'Amrán on the west, and Jebel

* See plan of Aden and adjacent bays, No. 7; scale, $m=1.0$ inches.

Hasan on the east. Near its centre is Jezirat-el-Juhub, a small round island, with a rock, barely covered with water, about 800 yards to the E.S.E. of it, with from 5 to 6 fathoms water between it and the island, to the N.W. of which a shoal patch extends a short distance. On the western side of the bay is the tomb of Sheik Sammarah, surrounded by a few fishermen's huts. Near the tomb, projecting to the S.E. is a small, dark-coloured peak, called Jezirat Abú Shammah, and to the westward of it are two anchorages for small boats. The land surrounding the bay is a low, dreary, swampy tract of sand-hills, so much so, that at high water each cape appears like an island.

The soundings in the bay are regular, varying from 3 to 6 or 7 fathoms, with a bottom of sand and mud.

JEBEL HASAN is a mountainous mass of granite, forming a peninsular promontory, 6 miles long from East to West by 3 miles in breadth; its highest peak, in the form of a Sugar-loaf, rises to 1,237 feet above the sea. This promontory has numerous projecting points, to each of which the Arabs give a name: to the S.W. are Rás Feikam and Rás Alargah; the most southern, called Rás Mujallab Heidí, forms the western limit of a small bay called Bander Sheikh. Rás Abú Kiyámah divides this bay from Khór Kádir. On the southern and eastern sides of this promontory are nine rocky islets, nearly connected with the main at low-water springs: one is in the small bay of Bander Sheikh, to the eastward of Rás Mujallab Heidí; two lie in the middle of the entrance to Khór Kádir, to the north of which extends a reef of rocks for a quarter of a mile; another, Jezirat Sálil, S.E. of which is a rock awash, is situated off the S.E. point, called Rás Sálil; and five of them off the N.E. bluff, about one mile from the shore. The bays and islands round the promontory are safe to approach, by paying attention to the lead, the soundings decreasing gradually to the shore.

The white tomb of Sheikh Kádir is about 1,100 yards to the northward of the extreme point of Rás Abú Kiyámah. Near this spot the 'Akrabís deposit coffee, cotton, and a few other articles of merchandise, in readiness for the small trading boats lying in Bander Sheikh and Khór Kádir, the only two ports belonging to the Akrabí tribe.

At the eastern end of this mountainous promontory is a remarkable double peak of granite, 700 feet in height, which, from its peculiar shape, is known by the name of the Ass's ears. The outline of the whole of Jebel Hasan is very picturesque; a deep ravine winds through the hilly track from Bander Feikam to the little bay of Bander Sheikh. The land to the northward is low, and immediately at the back of the mountains a deep inlet, named Khór Biyar Ahmed or Seilán, ex-

tends 3 miles to the westward, almost insulating the promontory of Jebel Hasan.

Biyar Ahmed, a small fort and village, is situated about 3 miles from the beach, and $6\frac{1}{2}$ miles North of the Ass's ears, containing (in 1836) about 250 inhabitants; it is the residence of the chief, or sultan as he is called, of the 'Akrabí tribe. About 2 miles to the N.E. of Biyar Ahmed is the village of Seilán.

The territory of the 'Akrabí tribe does not exceed 20 square miles, with a population of about 600 males; they are a treacherous race, and are not to be trusted; their territory is bounded on the N.E. by the Abdálí and Haushábí, and to the westward by the Hagrabee tribes.

The chief produce of the country is jowári (millet), of which great quantities are exported.

CAPE 'ADEN is a high, rocky, peninsular promontory, extending 5 miles from East to West, by 3 miles in breadth, the most elevated part of which bears the name of Jebel Shamshán, so called from the turreted peaks on its summit, the highest of which reaches 1,776 feet above the sea, and is visible at a distance of 60 miles in clear weather; it is almost entirely composed of limestone. The peninsula bears much resemblance to the rock of Gibraltar; and since it came into the possession of England (in 1839) has been rendered nearly as impregnable. Its rocky heights are more elevated, and much more peaked, than that celebrated European fortress. The peninsular promontory of 'Aden is almost divided from the mainland by a creek on the eastern side of this harbour, named Khór Maḡsá, similar to that behind Jebel Hasan, which gives these lofty promontories—not very unlike in appearance—the aspect of two sentinel islands guarding the approach to the magnificent bay they enclose.*

Numerous rocky points project from this mass of mountains, forming small bays, and shelter for boats. Commencing on the north-western side, the point of Hejáf forms the southern and western limit of the Inner harbour, immediately off it lies the rock named Jerámah marked by a beacon. Half a mile to the westward of Hejáf is the rocky point of El'Ainah, and a quarter of a mile beyond is the island Sheikh Ahmed, or Flint rock; 500 yards farther west is the point Rás ibn Jarbein: rather more than half a mile beyond is Rás Marbút, or Steamer point; and at the same distance again is the extreme west point of the promontory, named Rás Tarsheín, the high peak to the eastward of which rises 988 feet above the sea. Turning thence to the S.E. the same bold coast continues for $2\frac{1}{2}$ miles, as far as Round island or Jezírat Denáfah; one mile beyond which is Rás Sinaillah, the southernmost point of the peninsula.

* See plan of Aden anchorage on chart No. 7; scale, $m = 6.5$ inches.

The territory of Aden is under the administration of the Government of Bombay, and comprises an area of about 35 square miles.

'ADEN HARBOUR.—**Bander Tuwayyi**, or Aden West bay, generally known as 'Aden Back Bay, is formed by the peninsulas of Jebel Ḥasan on the west, and Jebel Shamshán on the east. It is about 8 miles broad from East to West, by 4 miles deep; and is divided into two bays by a flat, which runs off half a mile to the southward of the small island 'Alíyah: the entrance between Rás Salíl on the west and Rás Tarsheín on the east is $3\frac{1}{2}$ miles in width. The depths of water in the western bay are from 3 to 4 fathoms, decreasing gradually towards the shore; across the entrance the depths are $4\frac{1}{2}$ to 5 fathoms, and at a distance of 2 miles outside 10 to 12 fathoms; bottom sand and mud, both inside and outside the bay. The town of 'Aden is about 4 miles from the landing place.

The Inner bay, known as 'Aden harbour, is at high water between 3 and 4 miles long from North to South, and 2 miles broad, but the sandbanks at its northern and eastern shores which dry at low-water springs, contract the harbour to about two-thirds the above dimensions; the entrance, between the sandspit off the island of 'Alíyah on the north and Rás Hejáf on the south, is, at low water, about a third of a mile across; off Rás Hejáf is a sunken rock which must be avoided; the depths across the entrance, and in the centre part of the bay, are from 2 to $2\frac{1}{2}$ fathoms, decreasing towards the shore. This harbour is used solely by baghalahs and small vessels. There is a fine pier, and a large village has sprung up near it.

There are several islands in the Inner bay: the eastern and principal one, named Jezírat Sawáyih, is 300 feet high, and almost joined to the mainland at low-water springs: the others are named Marzúk Kabír, Keís el Ḥammán, Kalfeteín, and Feringí; and on the sandspit at the north side of the entrance are two small islets named Jám 'Alí, and 'Alíyah; outside, about 2 cables distant from the peninsula, is the island Sheikh Ahmed, or Flint rock, with a channel between of 2 fathoms.

Town.—To the northward of Rás Marshigh is situated the town of 'Aden, lying on a plain little more than half a mile square, encircled on the land side by singularly pointed hills, with its eastern face open to the sea, while immediately in front is the rocky fortified island of Sírah. This island, which commands the eastern bay and town of 'Aden, is a triangular rock about 430 feet high towards the southern end, half a mile long by 600 yards wide: the passage which formerly existed between it and the main is now filled by sand, consequently at low water it is joined to the coast.

Population.—The population in 1872 was 22,000, including troops and followers.

Supplies.—The water supplied to the shipping from the wells is very brackish; but good water, distilled from the sea by a condensing apparatus, which has been erected in one of the small bays in the harbour, may be purchased at 12*s.* per ton, not including casks or boat hire. 30,000*l.* has been expended in clearing out the ancient tanks discovered near the town, from which water may be procured at a less price, but the charge for carriage to the harbour would raise the cost to more than that of the distilled water. There are immense stores of coal at 'Aden, the principal part of which belongs to the Peninsular and Oriental Company. Private merchants have large quantities stacked in the bay inside Sheikh Ahmed, or Flint rock. There are great facilities for coaling steamers. Provisions of every description are procurable; fruit and vegetables are scarce and dear.

Trade.—'Aden was declared a free port in 1850, since which it has engrossed nearly the whole of the coffee trade formerly enjoyed by Mokhá. The principal articles of export are coffee and honey; imports chiefly coal, cotton goods, sheep, malt liquours, wines, spirits, and sundries. The imports from the United Kingdom in 1878 amounted to 125,122*l.*; and the exports to 176,322*l.*

Telegraph.—There is telegraphic communication between 'Aden, Suez, Bombay, the cape of Good Hope, and elsewhere.

CAUTION.—'Aden is situated in the territory of the Abdáli tribe, which is said to number about 10,000 souls, who are not friendly towards Europeans; it is not safe, therefore, to land on the western shore of the West or Back bay.

The religion of the Abdáli tribe is Mohammedan, and they are, apparently, very strict observers of their creed.

Owing to several wrecks having occurred on this coast, the British political authorities here have entered into treaties with the Arab chiefs to respect wrecked vessels, their crews and cargoes.

LIGHT.—A floating *fixed* white light 38 feet high, visible 7 miles is moored off Rás Marbút, in 18 feet at low water; the vessel is painted red, with a red ball at the masthead, and exhibits a red flag during the day; and at night, on a vessel entering, fires a gun and burns a blue light.

SIGNALS.—On the approach of a vessel a signal is shown at the mast-head of the lightship indicating the depth of water in the channel, and also whether the tide is rising or falling:

- | | | | |
|-----|--|-------|-------------|
| 1st | Distinguishing pendant hoisted at the ensign staff | - | flood tide. |
| 3rd | Ditto | ditto | - ebb tide. |

PILOTS.—By hoisting the usual signal a pilot may be obtained.

In consequence of the increased number of steam vessels frequenting the port of 'Aden: ships of war entering the Inner harbour employ local pilots.

ANCHORAGE.—A vessel, according to her draft, may anchor in any part of these bays; but the usual anchorage is between Flint rock and Rás ibn Jarbein, off the coal sheds, situated near the latter.*

Outer Anchorage.—H.M.S. *Iron Duke*, in November 1871, anchored in 6 fathoms, with the light-vessel N.N.E. and Round island S.E. by E. $\frac{1}{2}$ E. A ground swell at times rolls into 'Aden Back bay during the period of the S.W. monsoon in the Arabian sea.

TIDES.—The tides in the bay are very irregular, being influenced by the currents outside. It is high water, full and change, between 7h. 30m. and 9h. 30m.; springs rise 7 feet, neaps $4\frac{1}{2}$ feet.

DIRECTIONS.—The coast round cape 'Aden is bold to approach and a vessel may choose her own distance. A vessel from the westward, may steer direct for the light-vessel, rounding it to the northward, and thence to the anchorage. Vessels from the eastward have the advantage of Marshigh light, and should pass about one mile south of it, to clear Rás Sinailah and Round island; then, after passing Rás Tarshēin, may steer directly for the light-vessel, and on to the anchorage. A vessel working into the bay, towards the anchorage, may stand boldly across in any direction, being guided by the lead, until the light-vessel is reached, to the north of which the depth becomes less, and short tacks must be made, there being only 18 feet at low water in the channel. It is advisable always to moor, the anchorage being rather confined; and good scope of cable should be given, in consequence of the sand squalls from the northward and eastward after sultry weather, that give but little warning.

RÁS MARSHIGH 2 miles eastward of Rás Sinailah is a narrow projecting cape, forming the south-eastern point of the promontory, and affording shelter to the anchorage of Bander Darás, which lies between this latter cape and Rás Taïh, a point half-way between Rás Marshigh and Rás Sinailah.

Between Rás Marshigh and the island of Sirah the curve of the land forms a small sandy bay, named Bander Hokat, and another to the northward between the north point of the island and Rás Kútam.

* H.M.S. *Undaunted* remained from March to June 1878 inclusive, moored off the saluting pier. This is the only place at Aden anchorage where a vessel drawing 23 feet water can be accommodated.—Staff-Commander T. Roberson.

H.M.S. *Euryalus*, in August 1879, drawing 23 ft. 3 in., had not less than 24 feet water in the channel when entering the Inner harbour.—Lieut. H. C. Hulbert, Navigating Officer.

LIGHT.—A *fixed* white light, of the first order, is exhibited from a lighthouse 244 feet high, on Rás Marshigh, that should be seen in clear weather 20 miles. The light is chiefly of use to vessels making 'Aden from the eastward. Westward of 'Aden the light is shut in by Rás Taïh when bearing E.N.E.

ANCHORAGE.—The soundings in 'Aden eastern bay are very regular, so that a vessel may choose her own position in from 5 to 10 fathoms. During the easterly winds a heavy swell rolls in; but from June to August, with the wind from the westward, good anchorage and smooth water may always be found under the island. During these months, if wishing merely to communicate with the authorities, this anchorage may be found handy. The hot dry gusts blowing from over the hills are usually strong and disagreeable.

GHUBBET SEILÁN.—From cape 'Aden, which is, perhaps, the most remarkable feature on the south coast of Arabia, the coast turns suddenly to the N.N.E. for 19 miles, then again to the eastward for 12 miles, reaching to Rás Seilán, forming the bay called Ghubbet Seilán. The shores around the bay are flat and sandy, particularly in the centre, gradually improving towards Rás Seilán. A low plain extends into the interior covered with stunted bushes, and patches of the cotton-tree and acacia, which latter thrives luxuriantly in this arid soil.

This part of the coast is inhabited by the Yáfa'í, a numerous tribe, said to number 20,000 persons, spread over an extensive tract of country, and reaching inland to the high mountains called from them Jebel Yáfa'í. This range, which rises about 6,500 feet above the sea, extends in an East and West direction, about 30 miles from the shore; but the bight of the bay, Ghubbet Seilán, approaches it within 20 miles. The Yáfa'í territory on the coast lies between the Abdálí to the S.W. and the Fuḥlí on the N.E. at Rás Seilán. In the interior it is mountainous, with numerous valleys, producing coffee, wheat and jowárí (millet), in abundance. The Yáfa'í have no vessels, their trade is consequently confined wholly to the inland.

Soundings.—The soundings in Ghubbet Seilán are very irregular and shoal water extends to a considerable distance off shore. Vessels should avoid it, if possible, owing to the difficulty they might experience in getting out of it, when blowing hard from the eastward. Several vessels have been wrecked here, and plundered by the natives.

RÁS SEILÁN is a low, round, sandy point; a few date trees grow near the cape, with some large trees to the N.W. About $1\frac{1}{2}$ miles to the northward of the cape is the small village of Sheikh Abdalla ibn Marbút, it forms the boundary between the Yáfa'í and Fuḥlí territories.

Soundings extend about 10 miles off shore, shoaling suddenly from 100 to 40 fathoms ; the 20-fathoms line averages a distance of 5 miles, and the 12-fathoms line $2\frac{1}{2}$ miles from the coast, decreasing gradually towards the shore. Sand, shells, and broken coral, is the general nature of the bottom.

The COAST.—From Rás Seilán the coast runs almost straight in a north-east direction for 22 miles to Saddle hill, called Kermin Kálási, then a little more east to Şughrá, with a sandy beach the whole way.

Al-Şáliḥ is a small town 10 miles to the N.E. of Rás Seilán, and about 2 miles from the coast : population (in 1836) about 500, who are chiefly agriculturists. The country immediately around is well watered and cultivated. To the S.E. of Al-Şáliḥ the tomb of a Sheikh lies near the beach, and close to it the fishermen draw up their boats. About $6\frac{1}{2}$ miles to the westward, towards the interior, is the village of Al Khór, surrounded by low hills, on which small towers are erected for its protection.

BARROWS ROCKS, so named from the discoverer, are two dangerous rocky reefs, with one and 2 fathoms water on the northern, and only one fathom on the southern one ; they lie $1\frac{1}{4}$ miles apart, and 2 miles distant, from the coast, rather more than half-way between Al-Şáliḥ and Şughrá from which latter place the northern reef bears S.W. $4\frac{1}{2}$ miles distant.

The best direction for clearing them is, to keep in, or not to come under 15 fathoms water while the dark saddle-shaped hill Kermin Kálási bears on any point between N.N.E. northerly, and N.N.W. This hill, which is about $1\frac{1}{2}$ miles from the beach, bears N. by W. 3 miles from the northern reef. There is a channel $1\frac{1}{4}$ miles wide, with 6 fathoms water, between the reefs and the reef which lines the shore, at this part of the coast, at a distance from it of about one mile.

SUGHRÁ, the principal port of the Fuḍhí territory, is a small village, with a stone building called a castle, being the residence of the sultan for several months in the year. It is situated about a quarter of a mile from the beach, on the borders of a plain commencing at the foot of Jebel Kharazi, which is its eastern limit, having on the north the valley leading to Wádí Bahreïn, and a barn-shaped hill with a peak on its western end ; and a number of granite hills, terminating in a small eminence, forming a point to the westward at some distance from the sea.*

Jowári (millet) is cultivated here in large quantities, and in the vicinity of the village is a large grove of date trees.

The Fuḍhlí tribe is reckoned at 15,000 persons. The officers of the E. I. Co.'s surveying brig *Palinurus* were cordially received by the sultan ;

* See plan for Şughrá on sheet No. 10 a ; scale, $m = 1 \cdot 0$ inch.

but as a general rule the Fudhlís are not to be trusted: they would take advantage of a vessel in difficulties.

The Fudhlí territory is stated as extending in a northerly direction for a distance of 80 miles, bounded on the east by Maḳāṭeïn, and the Urlají tribe, and reaching as far as Rás Seilán on the west, comprising about 70 miles of coast. The country is chiefly mountainous. Jebel Kharazí or Arraz, a high range 16 miles N.E. of Şughrá, reaching 5,442 feet above the sea. The Wádí Bahreïn winds through this range of mountains, abundantly supplied with streams which flow into an extensive lake, whence the valley takes its name. The largest village in this district is Meïn, with a population of 1,500, said to be 36 hours journey to the N.W. of Şughrá. Many of the natives are said to inhabit caves in the mountains; they are a fine, bold looking race of men; their religion is a lax state of Mohammedanism; the fast of the Ramazán passes almost unnoticed.

Supplies.—Good water may be obtained here, also bullocks, sheep, poultry, onions, and pumpkins.

Trade.—The chief exports of Şughrá are ambergris, coffee, jowárí, and ghí, or clarified butter. No fruit is grown except the plantain. Rice is highly prized by the natives.

ANCHORAGE.*—A small harbour for boats, with one, 2, and 2½ fathoms water, is formed by a break in the reef, which lines this part of the coast at a distance of half a mile. The mark for entering this harbour is, the castle in one with the peak on the west end of the barn-shaped hill inland. There is very good anchorage in 9 to 10 fathoms, 600 yards from the reef, the Sultan's castle bearing N. by W.

TIDES.—It is high water, full and change, at 8h.; rise of springs, 6 feet; the flood sets to the westward.

The COAST from Şughrá eastward to Maḳāṭeïn, a distance of about 44 miles, becomes irregular, jutting out into small points; for the first 13 miles it is flat, until Jebel Kharazí is approached, which gradually ascends from the coast. 17 miles East of Şughrá, there is a ruin on the coast, with a village to the northward of it 3 miles in-shore, and a tomb, about 7 miles farther to the eastward.

The Soundings on this part of the coast extend a very short way from the shore, there being 20 to 30 fathoms at a distance of about one mile.

JEBEL FUDHLÍ.—The range of lofty mountains extending for 20 miles East and West, about 5 miles inland, and following the same direction

* H.M.S. *Lynx*, in June 1871, anchored in 7 fathoms, with Sheik's castle N. $\frac{3}{4}$ E. and Kermin Kálási (Saddle hill) W. $\frac{3}{4}$ N.

as the coast line, is called by the inhabitants *Jebel Kharazí*, but by the Arab navigators *Jebel Fudhlí*; its summit is singularly broken into gables, peaks, and bluff points. The most conspicuous gable is rather to the west of the centre of the range, and rises 3,900 feet above the sea; it is remarkable for an opening like a great embrasure or cleft, which gives it, from the eastward, the appearance of a double peak, whence it descends almost perpendicularly towards the sea. The highest point of the range is *Jebel Kharazi* or *Arraz*, is to the westward, and reaches 5,442 feet above the sea; from this it declines slightly to the eastward, where a barn-shaped mountain attains a height of 3,950 feet above the sea. The valleys intersecting this range of mountains, are thickly covered with vegetation.

Makátein Seghir, or the lesser, is a small anchorage for boats, formed by a projecting point. The water is shoal, and ground rocky.

MAKÁTEIN.—At 5 miles East of the boat anchorage just mentioned is an anchorage formed by a slight projecting rocky point of the coast, whence four rocky islets and a sunken rock project to the southward 500 yards. There are two shoal patches, one a third of a mile S.S.W., and the other nearly half a mile East of the outer islet; it is resorted to by the native trading vessels for shelter during the N.E. monsoon; the anchorage is on the west side of the islets, where the water is perfectly smooth, when blowing hard from the north-eastward. The islets are quite white from the guano deposited by sea birds, which frequent them in great numbers; vessels are occasionally employed in clearing this away, which is used by the natives for agricultural purposes.*

Makátein may be easily known by two black hills immediately to the eastward, and close on the sea; there are others 3 or 4 miles further east, but not so distinctly separate as the former; when approaching from the eastward, they resemble one long hill. At 500 yards to the north of the cape is a black ruin.

The COAST.—At 6 miles eastward of *Makátein*, is a small rocky point named *Sambah*, and for 13 miles beyond, as far as *Howaïyah*, a low sandy coast with rocky points prevails; it is also low to the westward of *Makátein*, and in many parts continues low for some miles inland, almost reaching the border of the *Fudhlí* mountains.

There are no dangers on this portion of the coast, the 10-fathoms line is about one mile, and the 100-fathoms line about 6 miles from the shore.

TIDES.—It is high water, full and change, at *Makátein*, at 9 h.; springs rise 6 feet; the flood sets to the westward.

* See plan of *Makátein*, on chart No. 10 a; scale, $m = 1.0$ inch.

HOWAÏYAH is a town 5 miles inland, situated on a wide plain, bounded on the north by high mountains ; the tops of the houses only are perceptible from a vessel in passing. It is the principal residence of the chief of the Urlají tribe, with a population of about 5,000 (in 1836), chiefly agriculturists.

It was at Howaïyah that the crew of the merchant ship *Nathaniel* were treacherously murdered in 1715 ; but the chief of the Urlají tribe denied to Captain Haines, of the *Palinurus*, who visited him in 1835, that his ancestors were implicated in the deed, they only having obtained possession of the country in 1775.

Supplies.—An abundant supply of good water may be procured here, also bullocks and excellent fish.

The COAST.—Rás Urlají is a low sandy point to the southward, on which stands the village called Howtha. The tomb of Sheikhah Hurba, a female devotee, is 21 miles further east : this ancient shrine is near the beach, and is a very conspicuous object, being whitened with chunam, and can be seen for several miles. Wádí Şanam the eastern limit of the Urlají territory, is 7 miles from this tomb.

The Urlají territory extends about 55 miles along the coast, from Makáţeín on the west to Wádí Şanam, on the east, and is said to reach 200 miles inland. The coast is very flat, but about 35 miles inland is a high mountainous range of very irregular outline. The tribe can muster from 7,000 to 8,000 fighting men.

During the survey of the coast in 1835, one of the boats of the *Palinurus* was fired at by some of the roving bedouins ; it is therefore advisable to be very cautious in all dealings with the natives.

Twenty miles to the eastward of the tomb of Sheikhah Hurba is the mosque of Sheikh 'Abdu-r-rahmán Baddás, and a small fishing village, standing on a low, round, sandy point. Two banks, with 40 fathoms water, are reported to lie at some distance off the shore, at this part on the coast, diligent search was made for them by the *Palinurus*, during the survey, but they were not found.

The coast from Rás Urlají is nearly straight E. by N. to the village of Sheikh Abdu-r-rahmán, thence it turns N.E. to Ras-al Kōşair, about 25 miles ; it is low and sandy.

Soundings.—The soundings off this part of the coast, and as far to the eastward as Rás Şufwán, are regular, the 20-fathoms line being about 2 miles, and the 100-fathoms line about 6 miles off shore : the bottom is sand, coral, and shells.

Rás Şufwán, a slightly projecting point, is thinly covered with bushes on its extreme edge.

The soundings off shore between Rás Sufwán and Rás-al-Ḳoṣair are also regular, extending from 4 to 6 miles, the 20-fathoms line being about 2 miles.

Haurá, a small village N.E. of Rás Sufwán, is a place of no note.

Jebel Makánatí is a projecting bluff on the coast, 4 miles N.E. of Rás Sufwán, forming with that cape a small bay for boats to anchor in. The cape is a whitish-looking bluff point, veined by dark strata, and elevated about 200 feet above the sea; close off it lies a rock, and inland it terminates in sand-hills: from the summit of the cape several villages may be seen in the valleys. The extensive valley of Wádí Meífah lies at the eastern foot of the Ḥamarí range, and to the northward of the range, and apparently in a prolongation of the Wádí Meífah, is the remarkable ruin named Nḡab al Ḥajar situated.

The territory of the Diyabi tribe extends along the coast for about 36 miles, from Wádí Ṣanam to Rás-al-Ḳoṣair; and inland, to the northward of the Ḥamarí mountains. The tribe number about 800, who bear a bad character, and are very much feared. They dwell principally in excavations of the rocks. Having no governor, or chief, to control them, their lives are occupied in murder, plunder, and every crime of the deepest dye.

JEBEL HAMARÍ is a range of hills commencing on the shore at Rás Sufwán. This range forms the leading feature of this part of the coast, extending from 25 to 30 miles in a N.E. direction: its highest central peak, about 16 miles N. $\frac{1}{2}$ W. of Rás Sufwán, rises to a height of 5,284 feet. The aspect of the whole range is very dismal and rugged; when seen from either the S.E. or S.W. its summit resembles the roof of a barn, and cannot be mistaken by a vessel approaching, on these bearings.

RÁS-AL-KOṢAİR, a low rounded sandy cape, is 7 miles farther to the N.E., and has two large trees on the edge of the shore; a conspicuous gable-shaped hill rises in the distant range of mountains, with a bluff both to the east and west of it; the centre of the gable or barn bears from this cape N. by W. about 40 miles distant.

GHUBBET 'AĪN.—From Rás-al-Ḳoṣair to Rás-al-'Asídah, a distance of 22 miles, the coast forms a bay 6 miles deep, named Ghubbet-'Ain; on its shores are situated the villages of 'Ain-Abú Ma'bad and 'Ain Jowárí the former consists of a mosque and about 100 huts; the latter of about 70 huts: springs of water, (as their name 'Ain denotes), date trees, and jowárí abound. Farther to the eastward is the small fishing village of Gillah.

The depths of water in this bay vary in the centre from 100 fathoms at 8 miles, to 20 fathoms at 4 miles off shore: towards the eastern side it is deeper, where there are 100 fathoms water within 3 miles of the shore.

RÁS-AL-'AŞÍDAH, the eastern cape of this bay, is very conspicuous, from having at its extremity a dark, rocky, conical hill, 160 feet high, and not unlike a haycock, discernible at a distance of 5 or 6 miles. The cape forms three projecting rocky points, off which the water is deep, there being 40 fathoms close in-shore.

Bá-'l-háf.—In a small bay to the westward of Rás-al-'Aşidah is the town of Bá-'l-háf, so named from a sheikh whose burial-place is contiguous. The bay affords good shelter during easterly winds; a sharp look-out must, however, be kept in the event of the wind changing to the westward.*

Trade.—There seems to be a small trade here, consisting principally in importations of coffee, cotton cloths, and coarse silks, brought from Makalleh, Shahah, and 'Aden. The tower is garrisoned by two or three Wáhidí soldiers, who levy tolls on all merchandise landed. There is no fresh water here but what is brought from a distance.

TIDES.—It is high water, full and change, at 8h. 30m.; springs rise 5 or 6 feet; flood sets to the westward.

DIRECTIONS.—The bottom is sand, entirely free from rocks, and the soundings regular; but care must be taken not to stand too far to the N.N.W., a shoal bank of rocks and sand extending half-a-mile from the shore, between one and 3 miles from the cape. Entering the bay with an easterly wind, the point should be rounded at a distance of 300 or 400 yards, being prepared to meet the sudden gusts of wind which may be expected on passing the cape, and which frequently blow with considerable violence. When clear of the point, keep Black Barn hill (a hill near the shore, bearing North about 2 miles from the western extreme of the cape) a point on the starboard bow, in running for the anchorage. The bank of soundings is very steep; a good scope of cable is, therefore, necessary to prevent a vessel dragging her anchor into deep water.

The COAST to the eastward of Rás-al-'Aşidah takes a direction E. by N. for 30 miles, as far as Rás-al-Kelb: for the first half of the distance, to Rás Makdahah, the shore is irregular, with projecting points, and small intervening bays.

Rás Rotl, 5 miles eastward of Rás-al-'Aşidah, a remarkable round volcanic promontory, is considerably elevated, with a hollow in the centre, apparently like a crater; on each side of the cape is a bay for boats.

Jebel Hişn Ghorab, 5 miles farther to the eastward, is a square-shaped, dreary-looking, brown hill, 456 feet in height, with very steep sides. On the summit are some very interesting remains of an ancient

* See plan of Bá-'l-háf, on chart No. 16 a; scale, $m=1\cdot0$ inch.

city,* from which it may be assumed that it was formerly one of the most important places on the Arabian coast.

BANDER HIṢN GHORÁB, a small, secure, and well-sheltered bay and harbour, $1\frac{1}{2}$ miles wide, by one mile deep, lies immediately to the eastward of the black hill of Hiṣn Ghoráb, which forms its S.W. point. Off the eastern side of the bay a rocky reef extends, reducing the entrance to rather more than three-quarters of a mile. At the bottom of the bay is the square tower and hamlet of Bír 'Alí, or the well of 'Alí, and several adjoining hamlets.

Directions.—In standing into the bay, after rounding Hálaní island, in 8 or 9 fathoms, steer right for the square tower of Bír 'Alí, taking care not to bring it to the northward of N. by E. $\frac{1}{2}$ E., in order to avoid the reef; anchoring in 4 fathoms about a quarter of a mile off shore. Approaching the harbour from the S.E. a vessel should not near the eastern point under a depth of 12 fathoms. During the S.W. monsoon a vessel may keep more to the westward, bringing the hill of Hiṣn Ghoráb nearly south of her. The bottom is generally clear sand, with an occasional patch of rock; within the harbour there is no danger on the western side.

Hálaní island, a rocky limestone plain, three-quarters of a mile long from North to South by half a mile broad, lies about one mile S.S.W. of Hiṣn Ghoráb point, separated by a narrow channel, several rocky points projects from it, with one of sand on its N.W. end. Between it and Rás Mafrádah, 2 miles to the westward, is a tolerable shelter from easterly winds.

Sha'rán is a circular, table-topped, sandstone hill 300 feet high, lying $3\frac{1}{2}$ miles E. by N. of the point of Hiṣn Ghoráb, and N. $\frac{1}{2}$ W. of Sikkah island, close to the sea, remarkable for a cavity or crater-shaped hollow within, filled with water, called Kharif Sha'rán, the edge of which is fringed by an overhanging bank of mangrove trees: the diameter of the cavity is about 2,500 yards, and is reported by the Arabs to be fathomless; the water is very salt.

KADHREÏN ISLANDS, or rocks, lie about one mile off shore, 4 miles East of Hiṣn Ghoráb, and nearly S.S.E. of Rás Khadá, a rocky point at the foot of Rás Sha'rán: there are one large and two lesser rocks, having a channel between the largest and least 300 yards wide, with a depth of 12 fathoms; also a channel between them and the shore, with 7 or 8 fathoms on the inland side: between the two smaller ones it is almost dry at low water.

* See Bengal Asiatic Journal for 1834.

SIKKAH or **JIBŪS** is another small island, rising 450 feet above the sea, and lying 5 miles South of Rás Khadá; it may be seen at a distance of 30 miles; the summit is flat and white, from the guano deposited by birds, which resort hither in great numbers. The island is called Sikkah by the natives in the vicinity, and Jibús by Arab navigators, from its resembling the Kítár, a musical instrument of the Indians.

There are no dangers about the island, a vessel may approach it in any direction, there being 33 fathoms water all round; the depths between it and the Kadhreïn rocks vary from 19 to 32 fathoms, with 100 fathoms 2 miles distant outside of it.

RÁS MAKDAHAH is a dark, moderately elevated cape, being the southern termination of a range of hills which extend 10 miles inland in a northerly direction; it forms the eastern limit of the bay of Makdahah, which is $3\frac{1}{2}$ miles across,—the Kadhreïn rocks forming the western limit,—a very excellent anchorage and shelter from easterly winds. This bay is free from danger, excepting a sunken rock half a mile off shore on the N.W. side; the soundings are regular, and the shore bold to approach.

The village of Makdahah is very small, consisting of one stone and mud building, and a few huts, lying in the eastern angle of the bay; it affords no supplies, and the water is very indifferent. It is the residence of a chief, a tributary to the sultan of the Wáhidí tribe, who derives the principal part of his revenue from the guano before mentioned. The inhabitants are wholly dependent on other ports for food.

Baraghah island, is a small, precipitous, and very lofty limestone rock, with not a vestige of vegetation on it, lying off Rás Makdahah between which is a safe channel one mile wide, with 15 fathoms water; when running along the coast it may be mistaken for the cape.

RÁS-AL-KELB, or cape Dog, a low, round, sandy cape, lies 13 miles E.N.E. of Rás Makdahah, the intervening coast being also low and sandy; it is considered very dangerous, many native vessels having been wrecked on it, and thence it is said to derive its name; great caution should be observed on approaching it during the night, as it is not then easily discernible, as there is a depth of 14 fathoms at one mile from the shore, and 50 fathoms about 2 miles off, attention to the lead will, therefore, give due warning of any danger.

The COAST.—From Rás-al-Kelb, the shore turns abruptly in a N.E. direction for 40 miles as far as Makalleh: the first part of it is wretchedly waste and sombre in aspect; sand-hills extend for some miles inland. The distant mountains in the interior appear equally sombre, yet relieved by a very irregular outline, assuming the forms of peaks, bluffs, &c., and

rising almost precipitously to the height of from 2,000 to 4,000 feet above the sea.

RÁS REHMAT, cape of Wind's Death, 8 miles N.E. of Rás-al-Kelb, is elevated about 300 feet, composed of limestone, and of a dark peaked outline: on its south-western face, the sand from the plain has been swept up into a great heap by the S.W. moneoon. It takes its name (**lull of the wind**, a term frequently used by the Arabs, when it falls calm) from the effects experienced by the baghalahs in running up the coast during the *tadh bíreh*, or early part of the S.W. monsoon; the Arabs considering that when they round this point the violence of the wind has abated. From seaward this cape is remarkable, as being the commencement of the bold, dark, and precipitous land extending to within 15 miles of Makalleh. Here is the eastern limit of the Wáhidí territory, which has a coast line of 60 miles in extent; its only two ports are Bá'l-háf and Hişn Ghoráb.

The Wáhidí tribe consists of several thousand persons, and, it is said, can muster 2,000 matchlocks in case of war. They are a brave and hospitable race, civil and generous to strangers who treat them with familiar kindness, but cunning and revengeful when oppressed; they are much respected and feared by their neighbours; their inland towns are very considerable, and well populated.

Rás Assassah, or Aşr-al-Ĥamrá (red footsteps), is a rocky point, being the termination to seaward of a rugged range of hills, which extend some distance inland. This cape is 6 miles N.E. of Rás Rehmat; and in the valley between lies the town of Al Ghaidhar, situated in luxuriant groves of date trees, at about 4 miles from the shore.

The soundings on this part of the coast are very deep, there being 60 fathoms water at a distance of $1\frac{1}{2}$ miles from the shore.

RÁS BURUM is a bold, dark, craggy cape, 8 miles further to the N.E., composed chiefly of limestone, the highest point of which is visible at a distance of 38 miles: a reef extends from it a quarter of a mile to the eastward, on each side of which is deep water.

Between this point and Rás-al-Ahmar, or the Red cape, the coast forms a small bay, called Ghubbet Kulún or Goolloon, in which the anchorage is very indifferent; and again between Rás-al-Ahmar and Rás Assassah is another small bay, in the bight of which is a small hamlet, inhabited by people of the Berishí tribe.

BANDER BURUM is a bay to the northward of the cape, formed by the bluff point of Radham and the low point of Burúm, and is a secure anchorage during the S.W. monsoon, but open to East and N.E. winds.* Landing is at times difficult on account of the surf and rocks on the beach.

* See plan of Bander Burúm, on chart No. 10; scale, $m=2$ inches.

The town of Burúm lies at the N.W. angle of the bay; it is surrounded by date trees, and situated immediately at the foot of an offset of the range of hills, about 1,100 feet high, which here extends down to the shore, and forms a bold and rocky coast. In 1835 its population was about 450 persons. The houses and huts are wretchedly built. This town, as well as Fuwah, Al Ghaïdhar, &c., is under the chief of the Berishí tribe; he has also several smaller tribes tributary to him. Ijilli, a white mosque erected on an eminence a short distance from the beach, may be plainly seen by vessels passing along shore.*

The territory of the Berishí tribe extends along the coast from Rás Rehmat to Fuwah in the bay of Makalleh, a distance of 25 miles, with a vast district inland. The tribe is called collectively, Berishí, and under one sultan; and is subdivided into four lesser tribes, each having its own name and chief.

The valleys inland are rich and beautiful, producing large quantities of jowári; they are bounded by the purple-veined mountains which rise from 5,000 to 6,000 feet above them, whose summits in the cold season are, it is said by the natives, at times covered with snow. Heavy rains fall in November, December, July, and August, and sometimes severe showers in April and May.

Supplies.—Excellent water is to be obtained at Burúm town, also firewood, sheep, fowls, eggs, onions, and pumpkins.

Anchorage.—The best anchorage with a westerly wind, is in 5 to 7 fathoms water, with the town of Burúm bearing N.W.; but a ground swell rolls in during the S.W. monsoon.

The Coast.—From the bluff Radham to Makalleh, a distance of 15 miles, the coast is low and sandy, forming a slight curve, with high mountains in the background. Along this part of the coast the soundings are regular, extending about $2\frac{1}{2}$ miles off shore, the 20-fathoms being about one mile distant: as Makalleh is approached, the beach becomes steeper.

Fuwah is a small town situated about half-way between Burúm and Makalleh, containing about 500 inhabitants, who appear to have a strong dislike to Europeans.

MAKALLEH BAY may be said to extend from Rás Burúm to Rás Makalleh, but the name is more properly restricted to the eastern portion of the bight between Fuwah and Rás Makalleh, in which are two small bays, close to the north-westward of the cape, known as the eastern and western. Of these two bays, the western is the most frequented by

* The town of Burúm is in a wretched condition, but has an abundant supply of water, large date groves, and gardens. Tobacco and dates are the chief produce, and a brisk trade is done during the S.W. monsoon, when Burúm becomes a port of refuge. —Nav. Lieut. R. J. Rogers, H.M.S. *Seagull*, 1881.

boats; this is merely a small nook, with one to 3 fathoms water; it has the town on the east, and is protected on the west by a reef nearly dry at low water, which projects not quite half a mile from the shore: there is a sunken rock a short distance off the reef, with $1\frac{1}{2}$ fathoms water over it; caution is required when standing in towards this spot. The eastern bay is seldom used, owing to the swell which rolls in during the N.E. monsoon.*

The bank of soundings in Makalleh bay, on which anchorage may be obtained, extends about half a mile from the shore, near the town, increasing to nearly one mile off the low sandy beach of Fuwah. The great bay of Makalleh is sometimes affected by a swell rolling in, when blowing strong outside, but, generally speaking, the breeze falls light towards night, and the swell subsides. A vessel may lie here in perfect security during the N.E. monsoon. The natives report that the S.W. monsoon blows home fresh; but as the sun declines the wind and swell decrease; and that often during the morning it blows strong enough from N.W. to carry a ship clear out to sea: they say that a vessel with chain cables might ride out the S.W. monsoon in the bay with safety.

The weather in the bay is exceedingly warm during the middle of the day; and on shore the heat is excessive. Land and sea breezes, with light showers of rain, are however occasionally experienced in the months of October, November, March, and April, and often in June and July, which tend to cool the atmosphere.

MAKALLEH, the principal commercial town on the south coast of Arabia, is partially built on a narrow rocky point projecting about a quarter of a mile to the south, and partly at the foot of a range of reddish limestone cliffs, rising about 300 feet immediately at the back of the town, and on which are six towers for the protection of the place. It has a picturesque appearance from the sea. Almost directly above this remarkable level range of cliffs, the flat-topped summit of Jebel Gharrah—the base of which is limestone, and the upper half of beautiful white marble, traversed by blue and grey veins—rises 1,300 feet above the sea, and may be seen at a distance of 42 miles. The northern portion of the town is built on ground sloping from the base of the hills to the bay, and enclosed on the west side by a wall extending to the shore, with only one entrance gate. The governor's house is a large square building, the others are chiefly cadjan huts, intermingled with stone houses, and two mosques. The houses on the projecting rocky point to the south are of stone, and a better description of building. The perpetual disturbances in the interior has damaged the trade of Makalleh very considerably.

Although the immediate vicinity of Makalleh is particularly barren, yet this is not the case a short distance inland. Leaving the town and proceeding

* See plan of Makalleh bay, on chart No. 10; scale, $m=2$ inches.

along the beach westward, the debouchement of a torrent-bed is reached, where there is a long narrow slip of salt water, such as is commonly seen at the ends of these places, and following this watercourse for about a mile, some extensive date groves and a large garden are met with. These belong to the governor of Makalleh, who has built watch-towers there, occupied by his soldiery to protect them from the incursions of the bedouins. The garden is irrigated by a stream of water, which is found to be derived from a rivulet that has its source in a rocky ravine of the mountains close by. On pursuing this rivulet to its origin, it is found to issue from a place about 300 feet above the level of the sea, and at a temperature some degrees above that of the surrounding atmosphere. It soon increases in size, and falling over a little precipice into a natural basin affords a most convenient place for bathing. There are many springs of the kind in the neighbourhood, and many holes and subterraneous hollows filled with water in the adjoining mountains. These all pour their contents into the rivulet mentioned, which, after a sinuous course, would, if its waters were not diverted to the garden, find its way to the lagoon at the debouchement of the torrent-bed. The water is fresh and tasteless, without smell or deposit of sulphur at its source, though attended in some parts by the presence of much magnesian limestone in botryoidal or clustered masses. The place where the spring is situated is called Bokharen, and the stream which flows from it is surrounded by date trees. The inhabitants of Makalleh wash their clothes there, and obtain their daily supply of water from it.

Makalleh is ruled by a nakib, or governor, one of the Hamúm tribe, who derives his revenue from customs duties levied on imports, and harbour dues. The population is a very mixed one, consisting of people of almost every nation.

Supplies.—Good water is to be obtained, but it requires watchfulness here as elsewhere on this coast. Vessels should supply their own casks, or the water will be brought off in skins, in quite a brackish state: it is procured from a well 2 miles to the west of the town. Firewood, bullocks, sheep, fowls, eggs, and some descriptions of vegetables, are to be had in abundance.

Trade.—There is a very considerable trade at Makalleh, which is carried on with India, the Red sea, and Maskat. The exports consist of gums, hides, large quantities of senna, and a small quantity of coffee. The imports are chiefly cotton cloths, lead, iron, crockery, and rice, from Bombay; dates and dried fruits from Maskat; jowári, bajirí, and honey, from 'Aden; coffee from Mokhá; sheep, honey, aloes, frankincense, coffee, dye, and slaves, from Berbereh, Bander Koşair, and other African ports; portions of which are re-shipped for Bombay. There is also a considerable and profitable coasting trade carried on with the different vessels passing

to and from the Persian gulf, and Red sea, which remain here, according to the custom of Arab sailors, a few days to rest, after being a short time at sea. The greatest number arrive during the date season, sometimes as many as 20 or 30 a day, of from 100 to 300 tons burthen, some with goods, others with pilgrims. Traffic in slaves exists to a great extent. During the S.W. monsoon a considerable portion of the trade is carried to Bander Burúm.

ANCHORAGE.—The anchorage off the town is good, in 8 to 10 fathoms water, sandy bottom, with the flagstaff on the governor's house bearing N.N.E., distant a quarter to half a mile from the shore. The only danger in the bay is the reef and sunken rock to the westward of the boat anchorage, before mentioned, and which must be carefully avoided.

TIDES.—It is high water, full and change, at 8h. 30m.; springs rise 7 feet; flood sets south-westward.

RÁS MAKALLEH is a low neck of land projecting about 2 miles in a S.S.E. direction from the base of the hills, which here extend from the interior close down to the shore. Three-quarters of a mile W. by N. of the cape is Rás Marbát, with a ruined fort; and $1\frac{1}{2}$ miles further to the N.W. lies the town of Makalleh.

Rocky Bank.—To the southward of the cape, distant half a mile, is a rocky shoal with $3\frac{3}{4}$ fathoms water on it, there being 18 fathoms between it and the cape, and 40 fathoms at a quarter of a mile outside of it. The bank of soundings extends about 2 miles from the cape.

Note.—The sea along the whole of this coast is remarkable for its clearness, the bottom being plainly visible, when calm and water smooth, in from 12 to 15 fathoms. When lying at Makalleh in the *Palimurus*, anchored in 12 fathoms, a new coil of deep sea lead line accidentally fell overboard and sank, which the compiler of these pages plainly saw at the bottom. An Arab seaman belonging to the vessel went down with a sounding lead attached to his feet, and recovered it without any difficulty.

CHAPTER V.

MAKALLEH TO RÁS SHERBEDÁT.

VARIATION in 1882.

Ras Farták 1° W.

| Kuriyán Muriyán Islands 0° 20' W.

The **COAST** from Rás Makalleh extends for 40 miles, to the E.N.E. in an almost unbroken line of low sand, as far as the cliffs of Hání, only a few rocky edges projecting occasionally. The coast here abounds with fish. The soundings are regular, but deep; the 20-fathoms line being generally one mile off shore, and the 100-fathoms line about 3 miles, with a bottom of sand and shells.*

BANDER ROWEÏNI is a small bay or concavity in the coast, immediately to the N.E. of Rás Makalleh, having 4, 5, and 6 fathoms close in-shore, from whence it shelves into very deep water. Baghalahs, or native trading vessels, shelter here during the S.W. monsoon. It is quite open to the N.E. monsoon.

Rághib, 2 miles farther to the N.E., is a small village with a large ancient mosque. The inhabitants of this village appear to be chiefly occupied in fishing.

Bú Heish, a village about 3 miles N.E. from Rághib, and $1\frac{1}{2}$ miles from the coast, situate in a well-watered valley, is surrounded by date groves.

Shehr, once a thriving town, now almost deserted, being inhabited by only a few fishermen, is situated near the coast, 13 miles from Rághib. There is an old fort near the village, which is the most conspicuous object, and the first perceptible on nearing the spot. This was formerly the residence of the chief of the Qasaídí subdivision of the Hamúm tribe.

Súku-al-Basír is a small town, lying inland about 4 miles N. by W. of Shehr, and said to contain (in 1836) 4,500 inhabitants. Its mosques may be distinctly seen from the sea. Tobacco, dates, and vegetables, with good water, are to be obtained here.

JEBEL DHEB'AH, an oblong table-topped hill, standing entirely separate from all other hills, rises close to the shore, thereby forming a good land-mark for making Makalleh from the eastward, from which it is distant 20 miles.

* See chart, S.E. and N.E. coasts of Arabia, No. 10 a; scale, $m = 0.10$ of an inch.

Zakfah is a village on the shore, 4 miles farther East, and 2 miles beyond is the ruined village of Máyariyán, where there is an abundant supply of water.

SHAHAH or SHEHR, 8 miles E. by N. of Jebel Dheb'ah, the chief town of the district of this name, extends one mile along the shore, having a fortified castle, the residence of the sultan, on an eminence, which is visible from seaward before any other object in the town. Here is a mosque and a custom house. The town is built in the shape of a triangle, with high walls round it, the dwellings being much scattered. Population (in 1836) about 6,000.*

Supplies.—Water is bad. Sheep and vegetables may always be obtained.

TRADE.—Shahah or Shehr in 1880 had not much trade, it consists principally of dried fish. The sultan and merchants have several vessels belonging to them; but the chief trade is carried on with vessels passing along the coast on speculation.

The manufactures of the town are not extensive, consisting principally of coarse cotton cloths, gunpowder, and implements of war.

ANCHORAGE.—The anchorage off Shahah is only an open roadstead. The best position is in 7 or 8 fathoms, three-quarters to one mile from the shore. The nature of the bottom is sand and shells.

Jebel Yakalíf is an isolated hill, 4 miles north-east of Shahah, on which are the remains of a wall and terrace. It forms a good land-mark for making the place.

Soundings.—Passing on to the eastward, the soundings continue very regular, and the coast safe to approach, the 10-fathoms line being about one mile from the shore, and the 100-fathoms line from 3 to 5 miles.

HÁMÍ, the next village, is 13 miles farther to the eastward, lying just below the dark double hill of the same name, in a ravine, with a date grove and cultivated ground. Population (in 1836) about 500, chiefly fishermen. There is a very little trade. Hot springs are numerous in the vicinity of the village; temperature, 140° Fahrenheit.

Anchorage about a mile off shore may be had, in 7 or 8 fathoms, sand, shells, and broken coral.

Supplies.—Water here is indifferent, and supplies difficult to obtain, sheep and vegetables being the only articles procurable, and those at exorbitant prices.

SHARMAH BAY.†—Between Hámí and Rás Sharmah, 9 miles farther to the east, the coast forms a bay 2 miles deep, with sandy bottom,

* See plan of Shahah road, on chart No. 10a; scale, $m = 0.5$ inches.

† See plan of Sharmah, on chart No. 10a; scale, $m = 1$ inch.

and regular soundings. In the bight of the bay, on a rocky eminence, half a mile from the coast, stands the ruined fort of *Ḥiṣn-al-Misenát*; and between this point and *Rás Sharmah* lies *Sharmah* bay, considered the best on the coast for shelter during the N.E. monsoon. To the northward of the cape are several bluffs and rocky projections from the coast, forming lesser bays, named *Bander Shesar*, with a solitary building on its beach; *Bander Sikafat*, *Ḳalfah*, &c.

ANCHORAGE.—Very good anchorage may be found in *Bander Shesar*, in 4 or 5 fathoms, with *Sharmah* point bearing S.S.E.; but the most frequented is off the village of *Al Ghurn*, in the depth of *Sharmah* bay, where vessels may be perfectly secure in from 2 to 5 fathoms water.

Dís, a walled town 2 miles inland, bears N.E. from the ruins of *Ḥiṣn-al-Misenát*, and 4 miles further inland is the village of *Thubba*. Both of these places are noted for their hot springs, of peculiar efficacy in rheumatic complaints.

RÁS SHARMAH is a small headland projecting to the S.W. forming the eastern limit of the bay. At one-third of a mile West of the extreme point of the cape lies the small rock called *Jezírat Sharmah*, 70 feet high. The channel between is 340 yards wide, having 5 and 6 fathoms water, deepening towards the rock, under the lee of which, it is said, vessels have rode out the S.W. monsoon in safety. Immediately north of the cape is a hill named *Chehár Saber*, rising 170 feet above the sea.

TIDES.—It is high water, full and change, off *Rás Sharmah*, at 9h.; springs rise, 8 feet; flood setting to westward.

The COAST from *Rás Sharmah* runs nearly east, for 8 miles, presenting a succession of limestone and chalk cliffs, rising almost perpendicularly 300 and 400 feet above the sea, which are visible at a distance of 25 miles.

This part of the coast is bold to approach, there being 5 and 6 fathoms water in some places within a few yards of the cliffs; the bank of soundings extends $5\frac{1}{2}$ miles from the shore, and the 20-fathoms line is 2 miles distant.

RÁS BAGHASHÚ, a rocky point, 300 feet high, is the eastern termination of this bold shore, on which are the ruins of an ancient town; they are close to the cliff, and cannot fail to strike the eye of a person sailing along the coast. A small village of the same name lies a little to the eastward; and 4 miles to the westward, in a gap in the cliffs, which is fronted by a sandy beach, is another village called *Dhafghán*, off

which is an anchorage for boats. To the northward, distant about 5 miles, is Jebel Hamúm—marked on the chart Sand hill—a hill in the vicinity of which are some curious ancient inscriptions, in the same character as those of Ḥiṣn Ghoráb.* There are several springs of good water here, and the land is well cultivated.

Aspect.—A high range of mountains extends in the direction of the coast, at a distance from the sea of from 10 to 15 miles. Commencing to the eastward of Makalleh, they bear the name of Jebel Jambúsh, then Jebel ibn-Shamáyik, with a remarkable bluff towards its eastern end on a still more distant range. Then follows Jebel Asad (mount Lion), which stretches away to the north-eastward towards Rás Farták.

The COAST from Rás Baghashú to Rás Koşair, a distance of 13 miles, runs in an E.N.E. direction; it is low and sandy.

The territory of the Hamúm tribe extends along the coast from Fuwah to Misenát, a distance of 100 miles. The tribe is subdivided into ten, each of which divisions has its own name, and separate chieftain; but collectively they are called Hamúm, and are under the dominion of the sultan.

The soundings are regular; the 20-fathoms line lying about 2 miles, and the 100-fathoms line about 6 miles distant from the coast, the nature of the bottom being sand and shells.

RÁS KOŞAIR is a low rocky point, off which the ground is very foul, a reef extending off from two small rocky islets, lying a quarter of a mile N.W. of the point to half a mile South of the cape. A vessel may find good anchoring ground off the reef, in 12 or 14 fathoms, but no shelter.†

One mile N. by E. of the cape is the village of Koşair, consisting of a few stone buildings, but chiefly huts. The inhabitants have some few boats, and catch abundance of sharks, the tails and fins of which, when dried, they export to Maskat and Bombay, whence they find their way to the Chinese markets, fetching good prices.

Half a mile to the N.W. of the village is a ruined square fort and a date grove; and 1½ miles to the west is the scattered hamlet of Korein.

The COAST from Koşair runs E.N.E. for a distance of 30 miles, forming a slight curve. It is low, sandy, and uncultivated, presenting a dreary appearance. The soundings are irregular, the bottom being rocky, with sudden overfalls; the lead, therefore, affords no guide.

Harrah, a small village, 4 miles N.E. of Koşair, is conspicuous for its round tower.

* See "London Asiatic Journal" for 1838, p. 91.

† See plan of Rás Koşair, on chart No. 10 a; scale, $m=2$ inches.

Serrár or Raidah Seghír, is another small village, $2\frac{1}{2}$ miles farther on with abundance of date trees near the houses.

Hasein-al-Katherí is a ruined fort, 2 miles from the coast, and 3 miles West of Raidah.

Raidah, a small town about three-quarters of a mile inland, is the chief place on this part of the coast, being the residence of the chief, who rules over the Kaşáidi subdivision of the Hamúm tribe: his territory extends from Rás Baghashú to Misenát. There are several small trading boats belonging to the place. The exports are frankincense, aloes, ambergris, and sharks' fins and tails. The population is about 700.

There are many hot springs here, which are said to possess great medicinal virtues; and from the number of places and ruins, and the cultivation which accompanies the presence of water here, this, next to Dhofár, may be inferred to be the most favoured part of the coast.

The soundings off Raidah are very deep, there being 20 fathoms water within a quarter of a mile of the beach, affording therefore no anchorage, being an open roadstead.

Opposite the town of Raidah there is a pit from 120 to 135 fathoms deep close to the shore, with 20, 30, and 40 fathoms all round it.

Among the most remarkable features on this coast are a series of horizontal effusions of black basalt, on the plain between the neighbourhood of Raidah and Wádí Masilah. These are three in number, and are called by the Arabs *Harik*, or burnt place. Each is accompanied by one or more cones about 100 feet above the level of the surrounding ground; and around each cone, for a variable extent, is a low field or tract of basalt, so strikingly defined by its blackness and the light colour of the plain over which it has spread, that, but for its being unattended by any active signs of volcanic eruption, it might be taken for a semi-fluid mass of lava.

In the centre of the first tract, which is in the vicinity of Raidah, are four cones; and this effusion having taken place over ground for the most part 100 feet above the level of the sea, has found its way into the watercourses, and appears at their openings on the shore in black rocks, contrasting strongly with the white colour of the limestone on each side. The plains of the lower mountains here also appear to be darkened, perhaps by ashes which were ejected from the cones or craters. There is, of course, hardly any trace of vegetation on it, and the heat from it in the month of May is almost insupportable.

The next cone is opposite Wádí Sheikáwí, about 9 miles from the last, and about 3 miles inland.

The last cone is about 4 miles West of Sihút. Its effusion has extended nearly to Wádí Masílah on the east, and joins with that of the cone on the west.

Connected with these volcanic effusions appear to be the shoal called 'Abd-al-Kúrí or Palinurus shoal, and the deep pit off Raidah.

Such irregularities in the bottom of the sea do not exist again throughout the whole of this coast, and it is more than probable that they are connected with the volcanic rocks on the shore immediately opposite: both the shoal and the deep pit may have been of this nature, one a cone, the other a crater.

MISENÁT is an old ruin on the coast, 12 miles E. by N. of Raidah; the land about is swampy, and abounds in mangrove trees. The remains indicate the site of a large town.*

This is a most interesting portion of the coast, containing as it does so many ruins and ancient inscriptions, which bear record of former greatness. The country, which was probably fertile and populous, is now almost desolate, and the few inhabitants nearly always at strife with their neighbours.

Wádí Sheikháwí, a valley 10 miles inland, is easily distinguished by a remarkable gap in the mountains that encompass it: several inscriptions similar to those of Hışn Ghoráb, &c., are to be found here.†

'ABD-AL-KÚRÍ, or Palinurus Shoal, is a dangerous patch of rock and coral, lying off Misenát; the shoalest spot,—which has only 15 feet water on it—bears from the ruin S. $\frac{1}{4}$ E. $8\frac{1}{4}$ miles, it extends 1,850 yards N.N.W. and S.S.E., being 300 to 600 yards broad. When on the shoal, the ruin of Misenát is nearly in a line with the eastern bluff of Sheikháwí gap, which lies fairly open, the western bluff bearing N. $\frac{3}{4}$ W., and the western end of the Sheikháwí mountains N. by E. $\frac{1}{4}$ E. The sandy beach on the mainland is not visible.

CAUTION.—It is advisable to avoid this spot entirely, either by keeping well in-shore, passing between it and the shoal, or by keeping a good offing of from 12 to 15 miles from the coast, as there seems reason to believe that the shoal is becoming gradually more shallow.

The soundings round this shoal vary suddenly, and do not always decrease on approaching it.

The **COAST** between Misenát and the Rás 'Akáb, a distance of 41 miles, is low and dreary, with a gradual ascent to the Sheikháwí mountains the eastern termination of which forms the western side of the Wádí Masílah.

* See chart S.E. coast of Arabia, No. 10b; scale, $m=0\cdot10$ inches.

† See "London Asiatic Journal" for 1838, p. 93.

At 12 miles to the eastward of Misenát is the small village of Samúm; and 9 miles further on is the deserted village of Sharkát.

Soundings.—The soundings are very regular, and the shore safe to approach; the 20-fathoms line is about 5 miles, and the 100-fathoms line 15 miles distant from the shore.

Wádí Masílah.—A large and extensive valley 6 miles wide, having on its west side the high range of mountains called Jebel Asad, and on its east side the high range which terminates on the coast at Rás 'Akáb; it forms the line of communication between the sea-port towns and the province of Hadramaut. The valley is well watered by running streams, and villages and date groves are numerous. On each side of the entrance is the ruin of a strong fort, showing that the pass to the interior was, at one time, thought worthy of being well guarded. The inhabitants are of the Mahrah tribe. Wádí Masílah is certainly the grandest of all the valleys of this coast which open upon the sea, and running inland seems to divide the mountainous land of Southern Arabia into separate tracts. Its width and the height of its sides appear enormous, and its summits are almost always bound together by overhanging clouds.

SIHÚT is a village 33 miles from Misenát, and S.E. of Wádí Masílah; from the sea it has the appearance of a large town, but is in reality in a most dilapidated condition. The scattered stone buildings in the neighbourhood have evidently been erected as places of defence against small arms. Its population, of the Mahrah tribe, varies from 300 or 400 to 2,000, according to the trade and season. Considerable intercourse with the interior is carried on through the Wádí Masílah.

Five miles to the westward of Sihút is the small village of Dharfet, with a date grove.

The traders of Sihút have several large and small vessels belonging to them, with which they carry on a lucrative trade in grain along the coast; the smaller boats are also employed in shark fishing, from which they derive considerable profit, the tails and fins, when dried, being sold at Makalleh or Maskat for the China markets.

ANCHORAGE.—The anchorage is an open roadstead; the soundings are regular, and depths of 7 to 9 fathoms extend rather farther off shore here, with a sandy bottom.

RÁS 'AKÁB is a high, red, sloping, rocky point; between this cape and Rás 'Atáb, a distance of 8 miles, are three bluffs, nearly equidistant, forming small bays, with sandy beaches, some of which afford shelter for small boats in the north-east monsoon. A few fishermen live in different spots along the coast.

RÁS 'ATÁB is moderately elevated, terminating in a low point, which forms the western boundary of Bander Libán.

Atab. — At 2 miles to the north-east of Rás 'Atáb, and one mile from the beach, is situated the town of 'Atáb, having three mosques, the western one of which has a minaret. The population in 1836 was about 400. The town is under the government of Keshín. To the west of the town, about one mile distant, is a date grove, and to the east is a well of good water.

Bander' Atáb or Libán.—The coast between Rás Atáb, and Rás Sharweïn, a distance of 13 miles, forms a bay called Bander 'Atáb or Libán, having regular soundings, and at its eastern limit, under Rás Sharweïn, affording shelter from easterly and north-easterly winds. With a fresh sea breeze, there is considerable surf on the beach. The coast in this bay is sandy, gradually ascending from the beach; in some parts the sand is blown high up against the face of the hills, one remarkable black peak showing itself through the sand.

Excepting a few trees on the summit and sides of the mountainous tract between Rás Sharweïn and the neighbourhood of Raidah and Rás Baghashú, the whole coast is barren and uncultivated.

RÁS SHARWEÏN is a high, dark, perpendicular cliff; the highest peak of which is about 2 miles from the point, rising to about 750 feet above the sea, gradually sloping towards the sea in the form of a gunner's quoin, and terminates in cliffs varying from 80 to 150 feet in height. Sand blown high up against the south face of Sharweïn hills, attests the continuous strength of the S.W. monsoon. About half a mile to the west of the point are two very remarkable sugar-loaf peaks close together, commonly known by the name of the Ass's Ears, which may be seen at a distance of 30 or 40 miles. They are about 100 feet high, and situated 150 feet from each other: each is four-sided, and rounded at its extremity, and the easternmost is shouldered. This cape forms the western limit of Keshín bay. The cape is bold to approach, there being deep water close under the cliffs.

KESHÍN BAY, 13 miles broad by 3 miles deep, is formed by the projecting headlands of Rás Sharweïn and Rás Derkah. The soundings in it are very regular, their being 10 fathoms water nearly 2 miles from the shore, gradually decreasing towards the beach, and increasing gradually to 100 fathoms at a distance of 20 miles. During the N.E. monsoon, there is a high surf on the beach, which renders landing from a ship's boat dangerous, except immediately to the westward of Rás Derkah, where there is a little nook, in which the small trading boats land their goods.*

* See plan of Keshin bay, on chart No. 10b; scale, $m = 1.2$ inches.

The coast surrounding the bay is low and sandy near the sea, having a high range of hills in the background, with a barren track of undulating sand-hills intervening.

Bander Lask is a deep bight at the western extremity of the bay, immediately to the north of Rás Sharweïn, affording excellent shelter during the S.W. monsoon for vessels of any size.

ANCHORAGE.—The best anchorage is in about $5\frac{1}{2}$ fathoms, one-third of a mile from the shore, with the second and third bluffs of the cape shut out of view, where vessels will be completely sheltered from S.W. and West winds, and lie in perfectly smooth water. In the other parts of the bay a heavy swell rolls in during the S.W. monsoon.

KESHÍN, a large straggling town, is situate in the depth of the bay, about half a mile from the beach, having a long sea front, which gives it the appearance of being larger than it really is. It is one of the principal ports of the Mahrah tribe, and the residence of the sultan.

The population is small, and they have only a few trading boats, with some fishing boats. A small trade is carried on with the Persian gulf, Zanzibar, and the western coast of India. To Zanzibar and Maskat they export salt and dried fish, to India they principally send money; and in return import from those places jowári, rice, cotton cloths, dates, coffee, and sugar.

E.N.E. of Keshín, at the distance of $1\frac{1}{2}$ miles, is the small village of Súk, near which is a small khór or lake of salt water, and a few date trees; and $1\frac{1}{2}$ miles farther on is another small village named Haft.

Fish is very plentiful off the coast, and of excellent quality; it forms the staple article of food with the natives, and in a dried state is given to their cattle.

Water.—Good water is procurable here from a well to the westward of the town.

RÁS DERKAH at 14 miles E.N.E. of Rás Sharweïn, is a bluff, precipitous, sharp point, formed of rugged and nearly perpendicular cliffs, varying from 200 to 400 feet in height, projecting to the S.E. $2\frac{1}{2}$ miles from the line of coast. The sea is blown against it with great force during the S.W. monsoon, forming large caves at its base, which is of limestone formation. The cape is bold and safe to approach, having 5 fathoms water close to the cliffs.

The cliffs extend from the extremity of the cape, about 2 miles to the westward, when they suddenly turn to the northward, forming two or three slight curves. On the eastern side of the cape, the cliffs extend to the northward till they meet the sandy beach.

A sunken rock, $3\frac{3}{4}$ miles N.E. of Rás Derkah lies three-quarters of a mile from the shore ; between the rock and the cape the coast forms a bay, that affords complete shelter and good anchorage during the S.W. monsoon.

The COAST from the cliffs of Derkah to those of Rás Farták, a distance of 20 miles nearly straight in an E.N.E. direction, is low and sandy, sand-hills rising gradually towards the interior, and having a high range of hills in the background ; the whole is barren, with the exception of a few stunted bushes, and small patches of cultivation near the villages.

The soundings off this part of the coast are regular, the 10-fathoms line being about one mile from the shore ; the bank extends to a great distance, the 100-fathoms line being 20 miles off at Rás Derkah, decreasing to 6 miles off Rás Farták.

Saghar, a small straggling village, is situated in a date grove close to the beach, 8 miles from Rás Derkah, containing about 90 houses, with a population of from 500 to 600 souls. On some low cliffs to the S.S.W. of it, stands a large white mosque. A considerable quantity of grain is cultivated in the vicinity.

Water.—An abundant supply of good water is to be obtained here.

Hasweil is a small village about 9 miles from Saghar, situated near the beach, with some date trees near, containing about 70 houses, and 450 inhabitants. There are several fishing boats belonging to it, on which the inhabitants principally depend for food ; they also carry on a small trade in them along the coast, sometimes going a long way from home.

Water.—Good water is to be obtained here in abundance.

Kesíd or Teif, as called by the Arab seamen, is a small fishing village, situated at the base of the high land on the western side of Rás Farták, consisting of about 32 small houses or huts, and a population of 150 persons. It has no trade, and the inhabitants are miserably poor.

Off this village, is the usual anchorage for boats trading with the Mahrah tribe, inhabiting the small valley on the western side of the cape.

The natives on this part of the coast are not well disposed towards Europeans, and disinclined to hold any intercourse with them.

At a distance of $1\frac{1}{2}$ miles from the beach are some date groves, with the villages of Dhekrabait on the eastern side, and Khadífat on the western side of them ; the former containing about 70 houses, built of mud and stone, and 250 inhabitants, and the latter about 90 houses and 300 inhabitants. There are several wells of good water near them, and the land is slightly cultivated. There are also two small salt-water lakes in the vicinity, from which the natives make considerable quantities of salt for exportation.

WÁDÍ, one of the most powerful towns belonging to the Mahrah tribe, lies about 3 hours' journey from the landing-place at Kesíd, following the valley at the western foot of the Farták mountains, having three or four forts for its protection. The population amounts to about 600 souls, 200 of whom are said to be well-armed men; they are wealthy for Arabs, and their arms well decorated with silver; they, in general with the whole of the Mahrah tribe, bear a bad character, and are not trusted by the trading Arabs; always ready to resent an injury, as was proved in the following instance. They, on one occasion, sent two baghalahs with slaves for the Indian market, which were seized by the English authorities at Pór-bander, on the Katiawár coast; on hearing which, the sultan of Wádí seized a Pór-bander boat under English colours, by way of retaliation.

Wádí is a place of considerable trade, its port being Kesíd; there are several baghalahs belonging to the inhabitants, on which they carry on a trade with Mangalore, Maskat, and Zanzibar, touching at other ports on their way. The principal exports are salt, salted fish, and shark fins. The imports are rice and cotton cloths from India; staves, tobacco, and wood for building boats and rafters from Zanzibar and the African coast; and dates from Maskat.

It is the largest slave-dealing town on the coast; great numbers of slaves are imported annually, and sold to their own and other tribes.

RÁS FARTÁK, the largest and boldest cape on the south-east coast, is a lofty mountainous headland about 2,500 feet above the sea, and visible at a distance of 60 miles on a clear day. The whole of the high range is comprised under this name, but the cape is formed by a narrow ridge descending gradually to the sea, and extending southward a mile beyond the summit. The sea-cliff, which at Kalfót is about 50 feet above the sea level, increases rapidly in height with the land, and soon arrives at a perpendicular escarpment of 1,900 feet, which it maintains on to the summit of Rás Farták. The upper line of this cliff corresponds in its irregularity to the depressions and elevations at the summit of the range, while its base is concealed by the sea. It is by far the grandest escarpment on the S.E. coast of Arabia, being uninterruptedly perpendicular from top to bottom, for an extent of 6 miles from the cape. Although its surface appears perfectly smooth, yet it is so deeply weather-worn into shelves that men live on them, and descend by them to within a few feet of the sea below. It is said to be a common thing for them to fall over and be drowned.

No part but the summit of this range presents any vegetation, and this is chiefly on the western side, where the range gradually slopes to the plain below. Indeed the barrenness of the Farták range generally, as well

as that of the land on each side, seems to indicate that this part of the coast does not catch any of the rain of the south-west monsoon.

Rás Farták is, next to Rás Seger, the highest and largest promontory on the coast. Like Seger, it is scarped to the sea on its eastern, and slopes rapidly to the plain on its western side. It is not, like Rás Seger, perpendicular at its extremity, but descends so gradually that its base is extended southward a mile beyond its summit. The real extremity of the cape is not in the direction of the ridge, but to one side, where the coast changes its direction from South to S.W. It is this sudden turn, connected with the presence of such a high and narrow range, isolated from all other mountains, that makes this cape, although it is not the largest, the most striking on the coast. At the extremity of the cape the range is about 2 miles wide at its base, and a short distance inland it spreads out to about double that extent, but it continues narrow to its bend, before mentioned.

At a distance, it has the appearance of an island, but on a nearer approach is found to be connected, by hills of much less elevation, with the range of high mountains surrounding the extensive bay of Ghubbet-al-Kamar. When about 30 miles off the cape in a south direction, it appears like an island with a gap in the middle. It is supposed to be the ancient Syagros, from its resemblance to a boar's head when seen at a distance of from 20 to 30 miles from the west or east.

From the extremity of the cape the cliffs extend in a northerly direction for a distance of 8 miles, then become lower and irregular for a farther distance of 9 miles, when it meets the sandy beach off the village of Tibùt, the rocky projections forming several small bays with deep water.

Soundings.—The cape is bold, and safe to approach, there being 9 and 10 fathoms water close to the cliffs, 20 and 30 fathoms at a distance of a mile, and 100 fathoms about 5 miles from the shore.

GHUBBET-AL-KAMAR.—The coast at Rás Farták takes a sudden turn to the northward for a distance of 40 miles, when it again gradually curves away to the E.N.E. as far as Rás Seger, forming, between the two capes, the extensive bay called Ghubbet-al-Kamar. From the high land, of Farták, the shore is low near the beach, with high land in the interior, for 40 miles, until near the village of Al Joári, in the vicinity of the Fatk mountains, having to the eastward, the high mountainous range of Jebel Kamar,—which varies in elevation from 3,000 to 4,000 feet, and comes close down to the sea.

The soundings in this extensive bay are deep, and very irregular. Off the low sandy coast at the western end of the bay the 10-fathoms line is about $3\frac{1}{2}$ miles from the shore, deepening into 100 fathoms at 13 miles distance; but as the high land of Al Kamar is approached, and thence to

Rás Seger, the water becomes very deep and the coast dangerously bold, in some parts there being no soundings at 100 fathoms within a mile of the shore, consequently there is no safe anchorage for vessels, neither is there any place of shelter along the whole extent of the coast.

Rás Fantás, the first headland to the northward of Rás Farták, and distant 9 miles from it, is a bluff about 200 feet high, having immediately over it a conical hill, called Fantás peak. At this point the high land leaves the sea and runs far away to the north-westward. At 2 miles North of Rás Fantás there is a low bluff point forming the northern boundary of a small sandy bay, in which is situated the small village of Nishto.

From the last-mentioned point the coast forms a bay, in the depth of which is situated a small creek called Khór Kalfót, about 400 yards in depth, having 6 feet water in it. Boats of 30 and 40 tons are hauled up here during the south-west monsoon. There are a few temporary huts occupied by the crews of the boats during the period of their being laid up. Khór Kalfót might afford some shelter to a vessel breaking down in the S.W. monsoon.

The Farták range, above Kalfót, runs back to the N.W. for 20 or 30 miles. From Khór Kalfót the coast runs N. by E. 20 miles to Al Gheither, the largest town in the bay, which is situated about 2 miles from the beach. The coast between, is low, with stunted bushes and a few date trees scattered very thinly over it near the shore. The small villages of Tibút, Herút, and Herák are situated on this part of the coast about a mile from the beach. Between the first two named villages, and $3\frac{1}{4}$ miles from the beach, is a small hill, forming in two peaks like a saddle.

From Al Gheither the coast trends N.E. for a distance of 17 miles to Al Joári, a white tomb situated 3 miles from the beach, with a few huts near it. The intermediate coast is of the same character as that to the southward of Al Gheither, and about midway is the village of Irrúb. To the southward of Irrúb, distant 3 miles, are some date trees and a tomb close to the sea, called Kabr Khyú.

Between Kalfót and Irrúd the 100 fathoms line of soundings extend 15 miles from the shore, over a sandy bottom; the 10-fathoms line is about 3 miles distant, the depths rapidly increase to 20 fathoms, and thence off into deep water. Off Al Joári the bank does not extend beyond $3\frac{1}{2}$ miles. In this part of the bay very weak tides prevail, but they are accompanied by strong rippings, which are rather alarming to persons unacquainted with their existence.

The premonitory swell of the south-west monsoon commences to roll into the bay early in the month of April, causing a very heavy surf on the

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beach. As a general rule, the winds are light and variable in the depth of the bay.

The range of mountains called Fatk come down close to the sea, 9 miles East of Al Joáirí, and run in a west-north-westerly direction until they join the Farṭák range. Their average elevation is about 2,000 feet above the sea. From hence the coast continues in a straight line E.N.E. to Rás Seger, the mountains rising abruptly from the sea, with occasional small patches of sandy beach.

Wádí Shighót is formed by the Fatk and Athobe ranges of mountains, the former terminating in a sand-hill, and the latter in a dark bluff point. Off this place the bank of soundings extends 7 miles, with overfalls near the edge. There are 10 fathoms water within a half a mile of the shore.

DAMGHÓT, the only sea-port in Ghubbeṭ Kamar, is a town situated in a valley at the western extremity of Jebel Kamar, on an irregular plain about a mile square, and bounded on all sides, except the sea, by almost inaccessible mountains. A reef of rocks extends from the shore 250 yards on which the sea breaks; on the eastern side of this reef there is good landing when the south-westerly swell is not very heavy, when the western side is almost unapproachable at such times. On the western side of the plain is a salt-water khór, with a few date trees round it; and on a cliff immediately over the town stands a ruinous fort. The town consists of about 90 mud houses, with a population of about 400 people. They possess one baghalah, with which they trade yearly, exporting ghí, hides, and gums; and about 40 small boats rudely sewn together, in which they are chiefly employed during the fair season shark fishing.

This is the eastern limit of the coast line of the Mahrah tribe; between it and Rás Tharbat Ali the ground is said to be neutral and inhabited both by Mahrah and Gharrah. There is a very extensive burial-ground here, in which are many ancient graves similar to those at Rás Rísút, while the more modern ones have ridges over them, marking the longitudinal axes of the body laid beneath. The latter most probably commenced with the introduction of Mahomedanism, the former being the graves of the old pagans.

At, and from Damghót to the eastward, the bank of soundings becomes very narrow and steep, there being no soundings in some places at the distance at $1\frac{1}{2}$ miles from the shore, and from 7 to 10 fathoms close to the shore.

Jádeb, a village built under some projecting rocks, is distant 9 miles E.N.E. from Damghót. Three miles farther on is Hauf, a village and tower, the residence of a sheikh. Rás Tharbat Ali is a small rocky point.

about 200 feet above the level of the sea, having over it a bluff on the high range, nearly 4,000 feet high, which is very conspicuous from the south-westward, and may be seen at a distance of 70 miles: from the south-eastward it is not distinguishable. Thalghót is a grove of date trees, distant $8\frac{1}{2}$ miles E.N.E. from Tharbat Ali. There are large numbers of cattle in this locality. Kharifot, a very fertile valley, is $5\frac{1}{2}$ miles E.N.E. from Thalghót.

Rakhiót is a village containing about 60 inhabitants, 10 miles West from Rás Seger, situated in a valley called Khais-ibn-Omar, which produces abundance of limes and tamarinds. A petty sheikh resides here, who appears to have little influence over the people. Khais-ibn-Othman is another valley similar to the above, and situated 4 miles to the eastward. In it is a small village called Safghót, having a sheikh.

From Khais-ibn-Othman to Rás Seger the mountains rise like a wall from the sea, and the soundings do not extend more than a mile from the shore, falling off suddenly from 35 fathoms to no ground at 120 fathoms depth. The whole range of mountains from Damghót is comprised under the general appellation of Jebel Kamar, and although sterile in appearance at a distance, are clothed with wood from the base to the summit. The country from Rás Farṭak to Thalghót is inhabited by the Mahrah tribe, the chief of which resides at Keshín. The remaining portion towards Rás Seger by the Beni Gharrah, who own no supreme authority.

The Mahrah tribe is very numerous and powerful, its territory extends along the coast from Misenát to Damghót. They are an extremely bold and hardy race, in character crafty and treacherous, and are not trusted by the trading Arabs: their enmity towards the English is very great, and they take every opportunity of evincing it. Collectively, they are under the rule of a sultan, but are subdivided into four branches under distinct chieftains, which are again subdivided into classes, each class having its sheikh.

Supplies.—Bullocks and sheep are generally plentiful at all the villages in the bay. Vegetables are not procurable, nor are any signs of cultivation anywhere to be seen.

Weather.—The natives report that the south-west monsoon sets in generally about the 20th June, from which time it blows strong with a heavy sea. During this season most of the people retire to the mountains. Rain is uncertain, sometimes falling in abundance, and often the season passes over without any.

The current which sets to the E.N.E., early in April, along the S.E. coast of Arabia, is apparently turned off at Rás Farṭak, and strikes the coast again at Damghót; its average strength is 2 miles per hour.

During the north-east monsoon it runs in the opposite direction at the rate of one mile per hour.

RÁS SEGER, is a high, steep, and slightly projecting cape, rising in three steps from the sea, the highest step, which is a perpendicular bluff, being elevated 2,770 feet, and the summit of the mountain range which is an even table-land, is 3,380 feet above the sea. The eastern side of Rás Seger, which is not so high as the south-western, on account of the strata dipping towards the east, is perpendicularly scarped, and its base is concealed by the débris of superincumbent masses of limestone which have rolled over or fallen from its summit. The south-western side however is not perpendicularly scarped, but descends in three or four grand steps to the sea, the ledges of which are so narrow that the summit may be seen when only distant from the base half a mile. The bluff extremity of the cape is perpendicular to the water's edge.

The cape is very steep-to, there being no sounding at 100 fathoms within a mile of the shore.

The COAST.—From Rás Seger to Rás-al-Aḥmar 24 miles, the coast is rocky and irregular, forming a slight curve, called Ghubbeṭ Fazaiya, in which the soundings are still deep, but extend to a greater distance from the shore, there being 100 fathoms water 9 miles off: close to the shore the depths are 10 and 11 fathoms. At the western end of the bay is a round rocky islet, near to the shore, with deep water all round it.

RÁS-AL-AḤMAR, or the Red cape, is a slightly projecting rocky bluff point, formed by red irregular hills, running out from the high mountain range which skirts the coast. On the summit of the bluff is a remarkable sharp needle peak, forming a notch with a smaller peak.

RÁS RÍSŪT is a bluff rocky cape, elevated about 100 feet above the sea, 4 miles N.E. by E. from Rás-al-Aḥmar, being the termination of the hills of that cape: immediately to the east of the point are three small rocky islets. It is the western boundary of the low land of Dhofār, and the southern point of Bander Rísūt. The cape is composed of the white and grey limestone of the coast, and is much scarped and irregular in its summit from denudation. On its extremity are the remains of a small round tower of rude construction, and also those of buildings equally rude.

About half a mile from the ruins of the tower, still on the ridge of the cape, is an ancient burial-ground extending over an area of three acres. The graves are marked by nothing but a circle of large boulders surrounding a heap of loose stones, or what formerly was a heap of stones sunken in the centre. The larger of these graves measures from 6 to 12

yards in diameter, and are raised 2 feet above the level of the plain; they are formed of boulders of white and grey limestone gathered from the immediate neighbourhood. Around the large graves are smaller ones, looped on to their circumference, indicative of successive additions to them of less distinguished members of the family or tribe perhaps, unless all perished in battle, and were buried at the same time.

BANDER RÍSÚT, a small bay immediately to the northward of Rás Rísút, is formed by a concavity in the coast, which turns abruptly from the point, half a mile west, then suddenly to the northward for 3 miles, whence it stretches away again to the eastward. It affords excellent shelter during S.W. or westerly winds, and has good anchorage-ground in from 4 to 5 fathoms water. A white rock lies close to the shore in the bay, nearly one mile distant from the cape.*

Water.—There is a well of indifferent water half a mile from the beach.

The COAST from Rísút bay takes a direction E. $\frac{1}{2}$ N. 37 miles as far as Merbát bay. It is low and sandy until within 16 miles of Merbát, when low cliffs of 100 feet elevation again prevail. Off the low portion of the coast, the soundings are pretty regular, and extend 13 miles off shore, there being 100 fathoms water at that distance, and good anchorage in from 5 to 7 fathoms three-quarters of a mile off. The coast is bounded in the interior by a high range of mountains, of from 3,000 to 4,000 feet elevation, called to the westward *Jebel Kamar*, and to the eastward *Jebel Sabhán*, which skirt the coast, and terminate at Rás Nús.

The appearance of the coast from Rísút to Diríz is very pleasing to the eye, presenting a constant succession of green fields, cocoa-nut groves, and buildings, with the high range of mountains in the background. To the eastward of Diríz all traces of cultivation are lost, the ground being swampy and covered with mangrove, for a distance of 12 miles, until the village of Thákah is reached.

The coast between Thákah and Merbát presents a succession of limestone cliffs, of about 100 feet in height; the high range of mountains, *Jebel Sabhán*, sloping down to within about a mile of their edge. Near the mountains are several ruined forts, and on the mountain sides are several caves, into which the natives retreat during very hot weather, taking with them their cattle.

The coast is bold to approach, there being 10 fathoms of water within half a mile of the cliffs. The bank of soundings extends 3 miles from the coast, there being 100 fathoms water at that distance.

* See plan of Bander Rísút, on chart No. 10 b; scale $m=6$ inches.

The habitations of men here are for the most part in the rock. They dwell in natural caverns, some of which are of enormous dimensions; and as these are for the most part situated on the precipitous portions towards the sea, their position and number may be distinguished by their lights when night comes on.

The extensive plain of Dhofár is bounded on the west by the high land of Rás-al-Aḥmar, and on the east by Jebel Sabhán near the village of Thákah: it is the most extensive of the low land tracks that intervene between the sea and the mountains, which here recede to a distance of 15 miles. It possesses a rich arable soil, and an abundant supply of fresh water. The plain is but little cultivated, the inhabitants being an indolent race, and with the exception of the towns on the coast is uninhabited. There are several fresh and salt-water lagoons in this plain. The first seem to be formed from fissures in the ground opened by some terrestrial convulsion, and are all filled with water to the brim; the latter are at the debouchements of watercourses which pass across the plain to the sea.

The soil of Dhofár is rich, and the remains of agricultural marks show that at different periods it has been generally under cultivation. When the coast line of this plain was being surveyed in 1844, large tracts of it were covered with maize and millet. There are also several groves of cocoa nut trees in it, which yield large nuts.

For the protection of the cultivated parts, towers have been erected, from which watchmen discharge their matchlocks on the approach of suspicious characters. But this is of little use, for the inhabitants of the mountains, who are the principal depredators in this case, linger about during the day at a distance with their flocks or herds, and when the night comes turn them into the young corn, and eat the whole down in spite of everything. This but too frequently ends the labours of the industrious inhabitant of Dhofár, who has no appeal, nor dares interfere with the impudent intruder, a hair of whose head if injured, would bring his whole clan down upon the unfortunate agriculturist, under pretext for further dispossessing him. Hence it follows that the greater part of this fertile and well-watered plain remains uncultivated, and most of the inhabitants reduced to the greatest want, from the almost inevitable issue of their labours. Men may be seen going to till the ground with their sword in one hand and their hoe in the other.

The towns of Dhofár are congregated about its centre, near the sea, probably for mutual protection. They are five in number, viz., Diríz, Saláláh, Al-Háfáh, Al Robát, and Okád. The former three are situated around the ruins of an ancient city, now called Al-Balád, on the sea-shore. Al-Robát is a little distance inland towards the mountains, and has been

deserted on account of the continued predatory visits of the Gharrah. Okád is on the coast a few miles west of Saláláh.

The inhabitants of the plain of Dhojár are partly Gharrah and partly Al-Kathiri, and so deeply involved in blood-feuds that there are hardly two people among them who are not afraid to pass each other. Scarcely an inhabitant of one town dares go to another without a protector, called a *rubiya*, who is bound to take upon himself the insults offered to the man whom he protects. But these seldom amount to anything serious, for the *rubiya* being friends with all, few will open a blood-feud with him for the sake of being revenged on the man he protects; hence the latter is able to transact his business and return to his home with perfect security.

The inhabitants of this district, therefore, live in a most frightful state of anarchy. They are in constant fear of each other, and in terror of a descent of the Gharrah from the mountains. Indeed their condition is as unhappy as can well be conceived, and this they bear in their countenances. Not only the people of the plains but the principal people of the mountains are extremely anxious for the protection of a good government. The former hailed the arrival of the surveying vessels there with delight, hoping it was the object of the English Government to take possession of the country; and so persuaded were they of this, from the wish being father to the thought, that one of the principal sheikhs, a Gharrah chief, told Dr. Carter in confidence the number of men he could assemble at a short notice, and his willingness to place them at the disposal of the Government. This was the sheikh of Okád, a good old man, but depressed in spirit, and worn down by the intestine quarrels of his tribe.

During the south-west monsoon, the wind, waves, and sand are said to render Dhojár so disagreeable that the principal inhabitants retreat to the mountains, where they would appear to have estates and cattle.

The plain, after the rains, is said to be covered with an incredible number of sheep and cattle. Horses they have none, or not more than half-a-dozen miserable creatures.

In several parts of the plain there are ruined towns like that of Al-Balád. They amount to six in number, and are said to have been built by the Min Gui, of whom see the description of Al-Balád hereafter alluded to.

The frankincense and gum-arabic trees abound on the mountain slopes in the interior, as well as many other medicinal gums, which might be collected in large quantities; but at present the trade is small, owing to the want of some safe place of exchange or sale, as well as the want of protection; for there is no real safety, the inhabitants of the several towns being almost always at strife with each other, and the whole population of the plain in constant fear of the Beni Gharrah bedouins, who oppress them very much.

The inhabitants of the villages in the plain of Dhofár appear to have little intercourse with the bedouins of the mountains, who only visit them for purposes of trade, exchanging their gums for rice, dates, &c., which are again bartered to the trading boats which visit the coast: they are a mixed race, and are, like most town-bred Arabs, timorous, indolent, and much addicted to the use of tobacco.

The Beni Gharrah bedouins, who are the rulers of the country, inhabit the mountains, which they prefer to the hotter Tehámah, or plain, and wander from spot to spot, as pasture serves for their cattle and flocks. They employ themselves during the S.W. monsoon collecting gums, which they barter to the people of the plain, whom they visit for that purpose immediately before the feast of the Ramazán. They seldom eat meat, as they value the milk of either camel, cow, or goat too highly to kill the females: the males of the two latter they frequently dispose of on the coast for rice, dates, &c.

They are a fine, athletic race of men, and expert with their arms, which are the matchlock, yambe', and short straight sword; some are armed with a piece of very hard, heavy wood, which they throw with great precision as far as 100 feet, at which distance they could kill a man. This weapon is thrown so as to rebound along the ground, and every lad carries one in his hand.

CAUTION.—The Beni Gharrah bedouins have a great hatred towards Europeans. A party of officers and seamen of the surveying vessel *Palinurus*, on their return from Rás-al-Ahmar to Bander Rísút, where they had been for the purpose of taking observations, were fired upon by some of them, while under the protection of one of the tribe, a breach of faith before unknown. On another occasion, a year after, one of the boats of the same vessel, while sounding in Bander Rísút, was fired at, the ball passing through the side. Extreme caution is therefore necessary in all dealings with them.

Okád is a small village 4 miles N. by E. of Rás Rísút, and about half a mile from the beach, containing about 120 inhabitants, round which is a little cultivation, and some cocoa-nut trees, and near it is a salt-water khór.

Water.—There are several wells of good water in the village.

Abkad, another small village, lies one mile to the eastward of Okád, and half a mile from the beach, with a little cultivation, and about 80 inhabitants, who possess some fishing boats. There is a fresh-water lake in the vicinity.

Saláláh, a town containing about 600 inhabitants, lies nearly 3 miles from the last-named village, and $1\frac{1}{4}$ miles from the beach, surrounded by

groves of cocoa-nut trees and cultivated ground, giving the coast a fresh green appearance from seaward. There is one baghalah belonging to the place.

Water.—There is a lake and several wells of good water here.

Al-Háfáh, a town nearly one mile S.E. of Saláláh, and close to the beach, containing about 600 inhabitants, who possess a few fishing boats, is situated in groves of cocoa-nut trees, and well cultivated ground, and has several wells of good water.

AL-BALÁD.—At one mile East of Al-Háfáh, separated by richly cultivated ground, are the extensive ruins of Al-Balád, close to the beach, spread over an area of 2 miles in length, by 600 yards in breadth.* near to the eastward, is a large khór of fresh water, which is deep, and thickly covered with bulrushes. The situation may be known by the high mound formed by the ruins at the east end of the large grove of cocoa-nut trees.

Water.—There is good water to be obtained here, and at all the villages on the coast of Dhofár: it is dangerous for crews of ships to fill up their casks themselves, and in their own boats, owing to the surf which rolls in on the beach; the natives will bring out the water in their fishing boats. A constant supply of small casks or barécas should be sent to the shore, as the natives are very lazy, and not easily induced to recommence work after once leaving off. The people will supply the water at the rate of 120 gallons for a German crown.

Robát is a deserted town close on the northern edge of the khór; the houses are still in tolerable repair, with a mosque, the wall of which is built of stone; on the pulpit is an inscription with the date of its erection Ann. Hej. 1232; built by Abdu'l-Sheikh ibn Taujah.

Diríz, a small town $4\frac{1}{4}$ miles to the eastward of Al-Háfáh, close to the beach, is, like that village, situated in cultivated ground and groves of cocoa-nut trees. Round the town are several watch towers within shot of each other, for its protection. There is a khór of salt water immediately to the eastward, and 2 miles East are the ruins of a fort.

Thákah is a small village built of mud and stones, with a population of about 350 souls, situated close to the coast, which is here formed of limestone cliffs 100 feet in height, and at the foot of the mountains, which slope down to within a mile of the coast. To the westward of the village are groves of cocoa-nut trees and some cultivated ground. There are two fresh water khórs, and one (Khór-Rirí) salt, which latter apparently runs

* See Account of the ruins of Al Balád, by Dr. Carter, Royal Geographical Society's Journal, vol. xvi. 187.

from the mountains and discharges itself into the sea; it is probably fresh at its upper part, but near the coast it is very brackish, and there is a perceptible rise and fall: it is separated from the sea by a narrow ridge of sand, and it is said that formerly boats could anchor in it.

Supplies.—Good water and bullocks are to be obtained here.

BANDER MERBÁT, or Merbát bay, is formed by Rás Merbát to the south, and the cliffs before mentioned to the north; to the east is an extensive sandy plain, on which appear a few hills of moderate elevation. There is good anchorage in the bay, and complete shelter from 24 points of the compass, being only open from south to west.*

Merbát town is situated about the centre of the bay, close to the beach, and about one mile from the cape: it consists of 30 or 40 mud and stone houses, with a population of about 200 souls, who are very friendly inclined towards the English. To the northward of the town is a tomb. Around the houses are ruins of others of a more ancient date, from which the newer ones appear to have been constructed. This is commonly the case with the villages on this coast.

Merbát is the principal trading town of the province of Dhofár: the exports are frankincense and gum-arabic, which is collected here from the bedouins, and varies very much in quantity, being 3,000 to 10,000 máns (in 1835) annually. The weight used is the mán, which is equal to the weight of 48 German crowns, the current coin of the coast. The trade is mostly carried on by barter, they receiving rice, dates, cotton, cloths, &c., in exchange for their gums. The sheikh levies a duty of 10 per cent. on all exports, and 5 per cent. on imports.

Jebel Doán, or Merbát peak, 3,690 feet above the sea, is the western brow of the high range of limestone mountains, Jebel Sabhán, which, as before mentioned, skirt the coast between Ghubbet-al-Kamar and Rús Nús, and bears from the town N. $\frac{1}{4}$ W. It is the leading mark used by native navigators for making Merbát: the peak is nothing more than an elevated part of the mountains, from which they rapidly decline in height to the westward, thus rendering it a conspicuous object from the sea.

Supplies.—Very indifferent brackish water, firewood, and a few bullocks and goats may be obtained here. Merbát is a common place for vessels sailing along this coast to water at, although the water is so brackish that it is hardly drinkable, at least to those who have been accustomed to better; but about 4 miles west of it there is a mountain rivulet of excellent water, which, descending to within a few hundred yards of the shore, enables vessels to replenish their tanks there.

* See plan of Merbát bay, on chart No. 10 b; scale $m=3$ inches.

ANCHORAGE.—The best anchorage is off the town, in 7 or 9 fathoms with the point bearing South.

TIDES.—It is high water, full and change, at Merbát, at 9h. ; springs rise 6 feet 10 inches.

RÁS MERBÁT is a low rocky point projecting to the west, being the S.W. point of the low belt of land which extends in breadth from 6 to 12 miles from the Sabhán mountains to the sea. A reef extends 400 yards, from the point; caution is therefore necessary in rounding it, the soundings being very bold, 8 to 10 fathoms close to the edge of the reef, and 20 fathoms 400 yards from it.

The COAST.—From Rás Merbát to Jebel Kinkerí (Jinjeri) the coast is low, rocky, and irregular, forming several small sandy bays, with rocky points, and isolated rocks close to them. The soundings are very deep, there being 30 and 40 fathoms water about 200 yards off the shore, and 100 fathoms within a quarter of a mile.

Bander Kinkerí is a small sandy bay to the westward, and immediately under the high conical hill bearing that name. It is $2\frac{1}{4}$ miles broad at the entrance, and $1\frac{1}{4}$ miles deep, affording shelter from easterly and north-easterly winds, but open to the south. This bay has irregular soundings all over it, varying from 8 to 12 and 16 fathoms, with overfalls; the bottom is rock and sand. In the centre, on a line drawn from point to point, there are 26 fathoms, with deep water immediately outside.

Jebel Kinkerí is a remarkable conical hill, close to the sea, composed of limestone, traversed by veins of chalk and gypsum.

To the N.E., 15 miles from Jebel Kinkerí, is another hill called Jebel Masírah, of similar formation, with a rocky irregular coast between them; and 4 miles farther to the north-eastward, immediately over Rás Nús, is a peak called Jebel Nús 1,200 feet high, being the eastern termination of the high mountainous range Jebel Sabhán. Between Jebel Masírah and Jebel Nús is a small valley with a little brushwood; otherwise the same rocky irregular outline of the coast extends to Rás Nús, with deep water close to the shore the whole way.

The belt of low land from Merbát to Rás Nús is called by the natives Séllhá. It is bounded on the north by the Sabhán range, and on the south by the sea, and varies in breadth from 6 to 12 miles, extending N.E. by E. and S.W. by W. 36 miles. The whole is extremely desolate, there being no sign of vegetation to be seen, yet antelopes and hares manage to pick up a subsistence in the hollows of the watercourses. Near Rás Nús is a ravine, with some date trees, through which runs a mountain stream, after heavy rains.

Weather.—During the prevalence of the strong winds called *belát*, which are experienced in Kuriyán Muriyán bay, and to the westward of Merbát, a strong south-easterly wind will be found blowing over Merbát during the day, and light variable airs during the night, *see* page 4. Rain seldom falls at Merbát, but to the westward the mountains and valley of Dhofár experience a great deal.

RÁS NÚS is a low but prominent rocky cape, forming the S.W. extremity of Kuriyán Muriyán bay, and the S.E. point of a small boat anchorage, named after it.

The cape may be easily known by Jebel Nús, a mountain, 1,200 feet in height, immediately over it, running N.W. and S.E., and shaped like a gunner's quoin, the highest and most precipitous part being near the sea, something like a bluff. Immediately S.W. of Rás Nús is a large mass of rock near the sea, shaped like a tub.

BÁNDER NÚS is a small anchorage formed by a slight concavity of the coast, between the point of Rás Nús and a point called Ras Samhór, affording shelter from southerly and westerly winds. The anchorage is close to the shore, there being 9 fathoms water about 500 yards off.

Water.—Firewood.—Close to the anchorage is a spring of good water, sufficiently abundant to supply two or three vessels in one day, and may be known by a grove of date trees near to it. Firewood is procurable from the ravines in the neighbourhood.

Rás Samhór is a low rocky point, forming the northern extremity of Bander Nús, having a reef off it, and two small rocks a few yards distant. In a small valley between Rás Samhór and Rás Hullán, and about one mile from the sea, is the tomb of Nebí Saleh ibn Hud; it was once an edifice of some strength and splendour, being 50 feet long, and nearly the same in breadth. The whole is now a mere heap of ruins.

Rás Hullán, a low rocky point, is $2\frac{1}{2}$ miles N.N.E. of Rás Samhór. Rás Samhál, another low rocky point, lies $1\frac{3}{4}$ miles N.N.E. of Rás Hullán.

These three last-mentioned capes are merely slightly projecting points, forming the irregular line of coast between Rás Nús and Rás Hásek.

Water.—Firewood.—Wádí Samhál is a small and wooded valley situated between Rás Samhál and Rás Hullán, in which is a spring of fresh and a pool of brackish water, near the sea; firewood may be cut from the jungle.

RÁS HÁSEK, a low projecting rocky point, about 9 miles N. by E. of Rás Nús, forms the south point of Ghubbet-al-Dhúm.

Bander Håsek is a small bay on the north-western side of Rås Håsek, affording shelter from southerly winds. The soundings do not extend any great distance off shore, there being no bottom at 130 fathoms 500 yards off. Close to the shore there are from 5 to 12 fathoms water.

At a short distance from the centre of the bay, and in a valley, are the ruins of the ancient town of Håsek, with the stumps of a few dead date trees, and a well of brackish water. The natives here are wretched in the extreme, living entirely on fish, and many of them without clothing. Immediately to the south of Rås Håsek, in a slight curvature of the coast, is a plain called Sūk Håsek, from its having been the market-place when Håsek flourished. This curve in the coast is sufficient to shelter two or three boats from northerly winds.

An inlet of the sea (the bed of which is now a marsh, separated from the sea by a ridge of sand) once existed in the valley of Håsek, and in all probability formed the ancient port, as its waters would almost wash the base of the old ruined town. A few stunted date trees are scattered over its surface, and the bed of the valley higher up is densely filled with acacias, tamarasks, and other small trees. The slopes of the mountains produce the lubán, or frankincense, which is collected in small quantities, in the proper season, by the bedouins.

ASPECT.—The coast here presents a very striking scene; the unbroken face of the limestone mountains, with the sharp peaks of the granite ranges, one of which Jebel Habaríd, attains the height of 4,000 feet, are very grand; yet it has a most wretched appearance from the sea, not a particle of vegetation being perceptible to the eye. On shore, however, the valleys are found to be well wooded, having either wells or a rivulet of fresh water.

The Soundings on the coast between Merbát and Rås Håsek are very deep, extending in some parts not more than half a mile off shore, and in others to 2 and $2\frac{1}{2}$ miles. It must, therefore, be considered a dangerous coast, and vessels in passing should keep a good offing.

KURIYÁN MURIYÁN BAY between Rås Nús, to the S.W., and Rås Sherbedát to the N.E., being 70 miles wide by 26 in depth, having on the outer edge of the bank of soundings, running from the north shore, which is 26 or 27 miles distant, five islands, called the Kuriyán Muriyán islands, the largest four of which lie in a line nearly East and West.

The soundings in the bay are pretty regular, varying from 20 to 40 fathoms, decreasing towards the shore and islands, with a bottom of sand, coral, and shells; but occasionally rocky near the islands, and Rås Karwáu. The edge of the bank of soundings, commencing at Rås Håsek on the west, curves a little to the northward, and then continues in a

direction due East, passing within a mile or 2 outside the islands. The coast in the bay presents a succession of limestone cliffs and sandy beach.*

There are no villages on the coast of this extensive bay, and but few inhabitants, who live in excavations of the rocks, and subsist entirely on fish. A few are to be found near the lake just named, who will assist in procuring wood and water for a vessel.

GHUBBET-al-DHŪM, a bay on the west side, and within Kuriyān Muriyān bay, has Rās Hāsek for its southern, and Rās Montejib for its northern boundary. The coast towards Rās Therrar, about $4\frac{1}{2}$ miles N.W. of Rās Hāsek, is irregular and indented, with a sandy cove fronting Wādī Rekót; thence around the bay,—with the exception of a sandy spot 7 miles North of Rās Therrar, fronting a valley, where there is a pool of water,—is high, precipitous, and tabular, containing three conspicuous valleys, the principal of which, Wādī Rekót, is said to extend to the confines of Hadramaut, having the peak of Habarid and the Sabhān range of mountains as its southern boundary.

The valley appears to be thickly wooded and well watered. The breadth of the watercourse, and the huge masses of rock that have been swept down it, fully denote a strong torrent after a heavy fall of rain. At the entrance to the valley are a spring of fresh, and a lake of brackish water.

The soundings in this bay are regular; the 10-fathoms line being nearly one mile, and the 20-fathoms line 3 miles off the shore.

Rās Therrar is a small, low, sandy point; but about one mile to the southward, and a short distance inland, the land rises into steep cliffs.

Rās Montejib is a bluff headland slightly projecting from the coast, with a rugged peak close to the northward of it.

The coast at Rās Montejib takes a N.N.E. direction for 7 miles, where the steep cliffs terminate, and the high land recedes from the shore 2 or 3 miles, and after continuing in a line parallel to the beach, again reaches the sea at Shuwāmiyah. The shore and plain fronting the mountains are low and sandy, with some bushes on it; the coast-line being nearly straight in an E.N.E. direction. There is a sand-hill at the western extreme of the low land, and a clump of trees at the eastern extreme, near the high land or dark point of Shuwāmiyah, which is the darkest land surrounding the bay.

The coast from this point again assumes a bold character, being composed of steep cliffs, forming a table-land of from 400 to 600 feet elevation, which run in an unbroken line for 25 miles in an easterly direction.

* See chart: Kuriyān Muriyān bay and islands, No. 11; scale, $m=0\cdot5$ of an inch.

Rás Shuwámiyah is a point 10 miles East of the dark point of Shuwámiyah. The coast is bold, having 12 and 15 fathoms water within 500 yards of the shore.

RÁS MINJI, a slightly projecting bluff, nearly 700 feet high, is $10\frac{1}{2}$ miles to the eastward of Rás Shuwámiyah; close to it, eastwards, is a pool of fresh water near the sea. This cape forms the boundary between the Gharrah and Jenebeh tribes.

The soundings between Rás Shuwámiyah and Rás Minji are bold, with overfalls.

The cliffs about 2 miles East of Rás Minji are 706 feet high, from thence decreasing until leaving the shore; about 2 miles farther to the eastward they terminate a mile inland. Between this point and Rás Ķarwáu the shore is low and sandy for 7 miles, resuming its cliffy character about 2 miles West of that cape.

RÁS KARWÁÚ is a bluff and slightly projecting headland, about 800 feet in height, having an even, table surface, and steep, precipitous sides. Its component parts are a species of sandstone, lying over a horizontal stratum of chalk, with masses of flint and fossil remains embedded in it, of about 25 to 30 feet in thickness, while the former varies in thickness from 5 to 10 feet. In some places, between the two strata, are enclosed beds of shells, coral, and other marine productions. The summit appears to be composed of tertiary limestone, with fossil remains.

There is a sand-hill to the westward of Rás Ķarwáu, and the cliffs here assume a concave outline, being fronted by a piece of low land, the shore of which is lined with rocks. At the western extreme of the low land the cliff suddenly turns to N.E., and terminates half a mile inland, where there is a small salt-water lake, at the head of which the water is fresh. This lake nearly insulates this point of the cliff.

RÁS SHERBEDÁT, 2 miles East of Rás Ķarwáu, forming the eastern point of Kuriyán Muriyán bay, is a steep, precipitous, projecting bluff headland, having an even table surface, and a deep notch or concavity in the face of the bluff; its geological formation being nearly the same as that of Rás Ķarwáu.

Native boats, running down the coast, frequently anchor for shelter from the belát, off the low, sandy line of coast to the west of Sherbedát, from which it has obtained the name of Bander Sherbedát. There is good anchoring-ground all along, in from 5 to 10 fathoms water; but on approaching Rás Minji, the bank suddenly deepens from 7 to 30 fathoms. The bottom is sand, but outside it becomes rocky.

During the belát, or northerly winds, which blow with great violence in this bay, a vessel coming from the N.E. should round Rás Ķarwáu very

close, and be prepared for strong gusts, both in rounding and making towards the anchorage, off the pool of water. A large mangrove tree near the pool affords a conspicuous mark for knowing the position of it.

KURIYÂN MURIYÂN ISLANDS.—These islands are five in number, namely, Ḥásikí, Sódah, Ḥalláníyah, Kiblíyah, and Kırzáwet or Rodondo. The first four are situated on the edge of the bank of soundings, and lie in a line nearly East and West parallel with the north shore of the bay, from which they are distant about 22 miles. They are generally bold and rocky, the hills raising into regular conical peaks.

Telegraph.—This group of islands now belongs to the British Government, having been ceded by the 'Imám of Maskat for the purpose of landing the Red sea and India telegraph cable, of which Ḥalláníyah is the signalling station.

HÁSÍKÍ, the westernmost island of the group, lies about 15 miles E.N.E. of Rás Ḥásek, and is $1\frac{1}{4}$ miles in length North and South, by three quarters of a mile in breadth. It is composed of granite, without a vestige of vegetation, or any appearance of ever being inhabited. The surface is quite white, from the guano deposited on it.

The island is rocky all round, with two small bays on its eastern side. Half a mile S.W. by W. $\frac{1}{2}$ W. from the N.W. point is a rock 150 yards long, which dries at low water; with a channel between it and the island, having 16 fathoms water. There is no other danger off the island.

The average depths round the island are from 25 to 30 fathoms at a mile distance from its shore; and the edge of the bank of soundings passes near the south point, there being no bottom at 145 fathoms half a mile from it. The most elevated part of the island is 500 feet above the sea, near its southern point.

The channel between Ḥásikí and Sódah is safe, with the exception of a sunken rock off the west side of Sódah, to be mentioned hereafter. On a line drawn from the north side of Ḥásikí to the north side of Sódah, the depths are from 35 to 46 fathoms; to the south of that line the soundings suddenly deepen off the bank.

SÓDAH is the second island of the group from the westward, and the second largest in size, being 3 miles long East and West, by 2 miles wide, and lies 12 to 13 miles East from Ḥásikí. Its shape is oblong, concave in the centre on its north-eastern or longest side. The coast has many small projecting points, off which reefs extend from 100 to 300 yards, forming coves for small vessels or boats, and at the east end is entirely lined with rocks.

The island was inhabited many years since, and the remains of rude dwellings are still visible near a well close to the south-east point, the water of which is brackish.

On the south side of the island there is a small bay, half a mile wide at its entrance, and about 1,500 yards deep, with good anchorage, having 10 fathoms water in the centre, decreasing as the shore is approached. A ledge of rocks extends 500 to 600 yards from the eastern point of the bay, in a south-westerly direction, and there is a sunken rock at a short distance from the western point. This bay affords shelter from all winds, except from W.S.W. to South.

Half a mile West of the south-west point of the island is a sunken rock, surrounded by a bank, with 2 and 3 fathoms water on it between which and the shore is a narrow but safe channel, having 5 and 6 fathoms water in it.

Aspect.—The outline of the island is an irregular slope from the highest peak, which is near the centre, and 1,310 feet above the sea level; the whole is extremely barren, having no trees but tamarisks, and only a small quantity of grass and moss near the summit of the peak.

The soundings round Sódah are deep, there being 20 to 30 fathoms close in, between the east and north points; from the north to the west point 20 to 30 fathoms a mile off; 40 fathoms a mile off the south-west side; and the edge of the bank passes three-quarters of a mile from the south side, there being 130 fathoms at that distance. The bottom is sand and rocks on the east and west sides of the island; sand, shells, and coral on its north side, and grey sand on its north-west side. Off the south-east side, between this island and Hulláníyah, the bank extends southwards, but deepens suddenly from 33 fathoms.

JEZÍRAT HULLÁNÍYAH is the largest island of the group, being $7\frac{1}{2}$ miles long East and West, by $4\frac{1}{2}$ miles broad, and 18 miles in circumference, lying $4\frac{1}{2}$ miles to the eastward of Sódah.

The western point of the island is called by the Arabs Rás Shaṭṭ, by the islanders Erékhi Frahunt. The eastern point is called Rás Şáür, and the northern point Rás Hulláníyah, or Erékhi-Er-raḥīb, which is steep-to, there being 12 and 13 fathoms water close to the cliff.

Hulláníyah is the only island of the group that is inhabited, and only by a few people, who live in huts on the north-west side of the island, situated about one-third of a mile from the beach. They are almost entirely dependent on the fish they catch for their subsistence. A few boats occasionally touch here on passing, and exchange small and useful articles for dried fish.

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The anchorage is 500 yards off shore, in 10 or 12 fathoms, sandy bottom, abreast of a small sandy nook, $1\frac{1}{4}$ miles west of two conspicuous sand-hills, which are about $2\frac{1}{2}$ miles east of the western point of the island, and visible at a distance of 10 or 12 miles. It is open to all winds from East through north, to west. Vessels anchoring here must therefore be prepared to start at a moment's warning, the beláts, or northerly winds, setting in very suddenly, when the coast becomes a dead lee shore.*

Aspect.—The general appearance of the island is rugged, the centre being filled with numerous granite peaks, the highest of which is 1,503 feet above the sea, forming a cluster of chimney peaks closely united, and terminating at the eastern and western ends of the island in comparatively low points. The mountains terminate at the north point of the island in a bold, projecting, limestone bluff, 1,645 feet in height, being the loftiest part of the island, and presents a rugged and nearly perpendicular cliff to the sea for upwards of a mile on each side of the cape. The whole island is extremely barren, the largest and only tree being the tamarisk; there is a little grass on the eastern side.

Ghubbet Er-rahíb is a bay on the north-east side of the island, $3\frac{3}{4}$ miles wide from point to point, and $1\frac{1}{2}$ miles deep, formed by Rás Hulláníyah on the N.W. and Rás Šáür on the S.E., in which there is good anchorage in from 7 to 14 fathoms water, affording good shelter from all winds between S.E. to N.W., round by south and west.

Soundings.—The edge of the bank of soundings is about 2 miles south of the island, beyond which distance there is no bottom at 140 fathoms.

Dangers.—There are several shoals and rocks extending 2 miles off the west end of the island, between which are narrow channels of from 5 to 10 fathoms. One of these rocks, three-quarters of a mile from the point, dries at low-water springs. Off Rás Šáür, and for $2\frac{1}{2}$ miles to the S.W., the coast is lined by a reef of rocks, extending in some places half and three-quarters of a mile from the shore. One-third of a mile S. by E. of the south point of the island is a small bank, having $3\frac{1}{2}$ fathoms water over it; and in the bay to the westward of the point is a reef of rocks close to the shore.

* On the 25th September 1875, when blowing strong from S.S.W., with a heavy sea H.M.S. *Rifleman* anchored in Ghubbet Er-rahíb, but finding little or no shelter and too much sea, shifted her berth and proceeded to the anchorage on the north-west side of the island, in $6\frac{3}{4}$ fathoms water, with the north extreme of the Sodáh bearing S. 57° W.; extreme point of land, S. 52° W.; and bluff N. 68° E., the bluff and Rás Hulláníyah, nearly in line. This anchorage was found to be more protected from the wind and the sea smoother, with good holding ground.—*Remark Book, Navigating Lieut. F. Roberts.*

The distance between Hulláníyah and Sódah is $4\frac{1}{2}$ miles, but the safe channel is on the Sódah side, owing to the rocks lying off the western end of Hulláníyah, which reduce the width of the channel to $2\frac{1}{2}$ miles. There are 12 to 20 fathoms water in the clear channel, and the east side of Sódah, though rocky, may be safely approached to within half a mile.

Water.—Fresh water may be obtained from a well, 400 yards from the beach, in the centre of the valley turning westward, abreast of a small nook with a sandy beach, which may be known by a small peak that forms its eastern end. This nook is situated one mile to the westward of the east end of the long sandy beach, in the centre of Shubbet-Er-rahib. Two other wells are situated towards the western end of the island, one northwards, and the other southwards.

JEZÍRAT KIBLÍYAH, the eastern island, and third largest of the group, is nearly 2 miles long, East and West, $1\frac{1}{2}$ miles broad, and 5 miles in circumference, forming from every point of view several limestone peaks, the highest of which is 550 feet above the sea. It is merely a barren rock, and is rocky all round, with the exception of a small sandy bay at the north-west point. Like Hásikí it is white with the guano deposited by birds.

The channel between Hulláníyah and Kiblíyah is $12\frac{1}{2}$ miles wide, with from 20 to 46 fathoms water, and free from all dangers, except close to the islands.

Four Peaked Rock is a small rock, so named from its outline; it lies two-thirds of a mile W.N.W. from the north point of Kiblíyah, with a rocky channel between them of 2 to 3 fathoms. It is about 100 feet above the sea, and has a rocky ledge extending from it half a mile to the north-west, on which there are four small rocks dry at all tides, and several parts of the reef are also dry at low-water springs.

Well Rock, so called from its having a natural well on it, filled with salt water, which is probably thrown up during the south-west monsoon. It is situated 800 yards S.S.W. from the S.W. part of Kiblíyah, with a channel between them of from 7 to 10 fathoms water.

Dangers.—**Tilly Rock**, with 3 fathoms water on it, lies E. by S. $\frac{1}{4}$ S. rather more than a mile from the east extreme of Kiblíyah.

Rock.—There is a small and dangerous rock, even with the surface of the sea at low water, lying E. $\frac{2}{3}$ S. of Tilly rock, distant $2\frac{1}{4}$ miles, and bearing from Kiblíyah E. by S., $3\frac{1}{2}$ miles distant. Vessels should be careful in rounding the island at night, as the soundings are a bad guide, and the breakers on the rock are not always visible.

Within a few yards of the rock are the following cross bearings: Four Peaked rock in one with the north end of Kiblíyah, and Well rock just open of the south end of Hulláníyah.

The edge of the bank of soundings is $1\frac{1}{2}$ miles South of the rock, 2 miles North, and $2\frac{1}{2}$ miles East.

KIRZÁWET, or Rodondo, is the smallest island of the group, being a mere rock, with a double peak, the highest of which is 230 feet above the sea, and visible 25 miles; the point to the eastward is low. The base of the island is formed of four red granite rocks, all closely grouped together. It bears from the north point of Hulláníyah N.E. by E. $5\frac{3}{4}$ miles.

The only dangers off it are two sunken rocks, one about 300 yards to the West of it, and the other 150 yards to the N.W., with a channel between them of from 8 to 16 fathoms water. Close off the east point of the island are two rocks above water. On all other bearings the island is safe to approach, there being 20 fathoms water within 500 yards of its shore.

TIDES.—It is high water in the bay and amongst the islands, full and change, at 8h. 20m.; rise at springs, $6\frac{1}{2}$ feet. On the north side of the islands the flood-tide sets to the westward, and on the south side it sets to the eastward.

The ebb sets through the channel northwards, but is much influenced by the sunken rocks.

Current.—Between Rás Farṭák' and Rás Nús the current often runs against the wind during the N.E. monsoon; but amongst the Kuriyán Muriyán islands they vary very much, and frequently set to the north-westward, rendering it unsafe if becalmed near the islands: it is advisable, therefore, to pass well outside them, unless when land and sea breezes prevail, and a ship may then make progress against the monsoon by keeping close in with the coast.

CHAPTER VI.

RÁS SHERBEDÁT TO RÁS AL HÁDD.

VARIATION in 1882.

Rás Madraka $0^{\circ} 40' W.$

|

Rás-al-Hádd $0^{\circ} 0'.$

The COAST from Rás Sherbedát takes a turn N.E. for 21 miles, as far as Rás Sauķirah, presenting a noble limestone cliff about 600 feet in height, precipitous to the water's edge, and tabular at the summit. It is bold to approach, there being 20 fathoms water close to the cliff. Between these two capes are three slightly projecting points or bluffs, between which the coast is slightly concave.*

The soundings along this part of the coast, are regular, there being 27 fathoms 300 yards from the shore. Off Rás Sauķirah the soundings are shoaler off shore than close in, varying from 25 to 33 fathoms; and E. by S. $\frac{1}{2}$ S., at a distance of 26 miles from the cape, is a coral bank of from 21 to 27 fathoms; 7 miles to the eastward of the outer edge of this bank there is a depth of 60 fathoms, and at 26 miles distance the depth is 135 fathoms, with a rocky bottom; on the south edge of the bank there are 70 fathoms water at the distance of 14 miles.

RÁS SAUKIRAH is a prominent bluff cape, rising 622 feet above the sea, and forms the south-western extreme of Ghubbeķ Sauķirah.

Aspect.—On sighting the land from the N.E., Rás Sauķirah appears a perfect bluff, slightly concave in the centre of its perpendicular. To the northward of it a barn-shaped hill will rise, which at first appears separated, but on a nearer approach is found to be situated on the summit of the adjacent table land. The whole line of coast, when the sun shines on it, has the appearance of clay cliffs. From the barn-shaped hill the table land takes a more easterly direction, and gradually approaches the sea shore at the eastern extremity of the bay, when it is again lost in the northern distance.

* See Admiralty chart : N.E. coast of Arabia, No. 10 c ; scale, $m=0.10$ of an inch. This description is chiefly from a memoir by Lieut. A. M. Grieve, Indian Navy.

GHHUBBET SAUKIRAH.—The coast from Rás Saukirah takes a turn N. by E. for a distance of 35 miles, when it gradually curves away to the E. by N. nearly 60 miles as far as Rás Khasháim, forming between the two capes the deep bay called Ghubbet Saukirah. The shore is low and sandy throughout the whole extent, and thinly sprinkled with mangrove bushes; but at a short distance from 5 to 10 miles in the interior is a range of moderately elevated tabular hills. During the N.E. monsoon there is always a heavy swell rolling into the bay, and a high surf on the beach.

There are no villages on the coast within the bay, and it is only scantily inhabited by a few miserable fishermen of the Jenebeh tribe, who have no boats, but fish sitting on inflated skins, which they manage with great dexterity, pushing themselves safely through the high surf. They catch great numbers of sharks, which strange to say never attack their exposed limbs. The fins and tails of the sharks are dried, and carried to Jezírat, whence they are exported to Maskat by passing vessels.

The soundings in this extensive bay are shallow at its south-western extremity, but deeper and more regular at its north-eastern end. For a distance of 40 miles from Rás Saukirah, the soundings are shallow and a little irregular, over which there is generally a strong ripple, whereby the bank has derived the name of Rejjat-al-Jázir, but there appears to be no danger on it, except close to the shore, at a distance of from 15 to 35 miles from Rás Saukirah, and east of the barn-shaped hill, where a rocky bank, which nearly dries at low water 2 miles from the beach, extends 4 miles from the shore, having only $1\frac{1}{2}$ fathoms water on its outer edge. Towards the eastern extreme of the bay the soundings become regular, and the shore safe to approach, the 10-fathoms line being one to 2 miles off shore, gradually increasing to seaward. The extreme edge of the bank of soundings is 55 miles distant from the depth of the bay, and 17 miles south from Rás Madraka, where there is a depth of from 180 to 200 fathoms.

RÁS KHASHÁÏM is a dark bluff slightly projecting point, hardly sufficiently prominent to deserve the name of a cape; it is the north-eastern extremity of Ghubbet Saukirah, and 8 miles from Rás Madraka.

Takiyat Abuk (Abuks cap) so called from its supposed resemblance to a man's head-dress, is another bluff point, 4 miles S.W. of Rás Madraka. The summit is 333 feet above the sea.

Bander Jezírat.—Between Rás Madraka and the cliffs of Rás Khasháim, there is a small bay with a sandy beach, called Bander Jezírat. In this bay the bottom is of mud and sand, and a vessel may anchor in any part of it. Should the wind shift to the S.S.W. and blow strong,

which is not at all unfrequent during the N.E. monsoon, a vessel should change her position to the north side of cape Madraka. Boats from the northward often anchor here, for the purpose of procuring sharks' fins.

CAPE ISOLETTE, called by the Arabs Rás-al-Jezírat or Rás Madraka, more generally known by the latter appellation, is a low dark point, with a rocky islet off connected with it at low water. It forms the S.W. point of the gulf of Masírah.

When approached from seaward, the cape, which is in reality formed by three different points,—viz., Rás Markaz, Rás-al-Jezírat, and Rás Khasháim, making one prominent cape,—appears like an island, hence its name Jezírat or Isolette. On being first seen, the cape presents the appearance of small detached hillocks, but on a nearer approach the peaks become connected, and the small remarkable circular hill, Takiyat Abuk, before mentioned, is observed on the summit of the cape; this, however, is not distinguishable until long after the highest peak, in some points of view appearing like a saddle, is in sight from the deck.

The land about the cape is composed of black volcanic peaks, with tabular hills in the background of an average height of 450 feet. Copper ore of a poor quality is found in the vicinity of the cape.

The cape is bold to approach, there being 12 fathoms water within half a mile of the shore; the edge of the bank of soundings is distant 10 miles from the cape in an easterly direction.

GULF OF MASÍRAH.—The gulf of Masírah is an extensive and deep bight or bay, between Rás Madraka and Masírah island.

The whole coast of the gulf is very desolate, and thinly inhabited by small parties of the Jenebeh tribe, who subsist solely on fish.

CAUTION.—The gulf should be avoided by ships passing up or down the coast, owing to the numerous dangerous coral patches and banks which exist within its limits, to be described hereafter. It has been generally supposed by navigators that there is a strong indraught or current setting into the gulf, but during the survey by Lieutenant A. Grieve of the Indian Navy, in the *Palinurus*, no current was found to exist, except close inshore. The tides in the vicinity of the banks set regularly N.N.W. and S.S.E. at the rate of one to $1\frac{1}{2}$ miles per hour, which would not be felt by vessels passing up or down the coast; it would be advisable, however, for passing vessels to keep well clear of the banks, for currents may exist at certain periods, which were not observed during the survey, executed during the N.E. monsoon. It is very certain that several vessels have been set into the gulf and nearly lost, but most probably owing to the want of a due attention to the lead, not to a set of the current. As there is ample room for soundings being taken between the outermost

of the shallow banks and the edge of the bank of soundings, between which there is a distance of 16 miles, common attention to the lead will prevent any vessel running into danger, and a disaster such as befel the U.S. ship *Peacock* would be avoided. This vessel ran aground off Rás Zaiwari, to the eastward of Ghubbet Hashish in September 1835 and must have run over at least 40 miles of soundings before she struck.*

The gulf of Masirah should certainly be *always* avoided, unless in cases of extreme necessity, as one of the most dangerous parts of the coast of Arabia. During strong winds there is always a heavy swell rolling in, and on many parts of the numerous banks the sea breaks heavily, which, in foggy or hazy weather, would render it difficult for a vessel to work out of danger after once getting into it.

The coast from Rás Madraka takes a turn to the westward for $1\frac{1}{2}$ miles, then northward 9 miles as far as Rás Markaz; the shore is sandy with hills immediately behind, till within 2 miles of the latter cape, when it assumes a bold precipitous character. The shore from Rás Madraka for $3\frac{1}{2}$ miles is fronted by a narrow sandbank, which dries at low water. The land immediately in the interior is tabular, and elevated from 460 to 480 feet above the sea.

Anchorage.—In the bay immediately to the northward and westward of Rás Madraka, there is good anchorage, and shelter from southerly and south-westerly winds. See page 134.

Rás Al Dthullah, a small projecting rocky point, $4\frac{3}{4}$ miles from Rás Madraka, is the commencement of an uniform line of table land which extends as far north as Rás Kuerát, descending to the sea in perpendicular cliffs, varying in height from 230 to 480 feet in height. The land at Rás Dthullah is elevated 470 feet above the sea.

Water.—Fresh water may be procured in small quantities at the point, and the fishermen will take it to a vessel at a reasonable price.

Rás Markaz, is a bold, projecting, bluff point, and the highest part of the table land, being 480 feet above the sea. It is bold to approach, there being 6 fathoms water within 300 yards of the point.

Soundings.—The bank of soundings extends 10 miles off Rás Madraka, increasing to 24 miles off Rás Markaz, and is perfectly free from danger until the San Carlos bank is approached. The bottom is chiefly composed of sand and shells.

* H.M.S. *Lynx* on her passage from Muscat to Aden, whilst crossing the gulf of Masirah in May 1873, experienced an indraught into the gulf, and had to frequently alter her course to the southward. The wind was light from the southward, and the water smooth.—Remark book, Commander W. Keats.

The Coast from Rás Markaz curves to the north-westward for a distance of $3\frac{3}{4}$ miles, as far as Rás Khaisat al Yókh,—a bluff point difficult to make out unless close in-shore,—forming a small bay with a sandy beach, from which the lofty cliffs recede nearly three-quarters of a mile. In this beach is a lagoon of salt water.

Anchorage.—The bay affords good shelter from southerly and south-westerly winds, with safe anchorage in from 6 to 7 fathoms water, over a sandy bottom.

From Rás Khaisat al Yókh to Rás al 'Awáni, a distance of 14 miles in a northerly direction, the coast presents an uninterrupted line of bold perpendicular cliffs, and is safe to approach, there being 3 and 4 fathoms water close to, and 10 fathoms within half a mile.

Rás al 'Awáni is a bluff projecting point, elevated 284 feet above the sea, from which the coast runs N.W. by N., 5 miles to Rás Mattah, which is a bluff projecting point, 230 feet above the sea. From Rás Mattah the coast again turns north for a distance of $9\frac{1}{2}$ miles to Rás Kuerát; for the first 5 miles the cliffs are concave, and fronted by a sandy beach.

Rás Kuerát is a sharp projecting bluff, with a small peak on the extremity, 280 feet high, and is the termination of the bold perpendicular cliffs just described. It forms the south point of the bay called Ghubbet Kuerát.

Boat Anchorage.—On the north and west side of Rás Kuerát is an anchorage giving shelter from south-westerly winds, but it is only available for boats, the water being shallow.

SHÁB KADÚN or SAN CARLOS BANKS, of Horsburg, are several coral patches lying off this part of the coast, between Rás Markaz and Rás Kuerát, extending N.E. and S.W. 19 miles; the south-western extreme of the nearest patch bears from Rás al 'Awáni E.S.E., and is distant from the land 5 miles. From the central or shoalest bank, on which the *San Carlos* struck, Rás Kuerát bears N.W., and Isolette table S.S.W. $\frac{3}{4}$ W., both of which are visible from a vessel's deck.

The soundings on the banks are from 4 to 9 fathoms, with a coral bottom; considerable swell rolls over the shallow parts, and in a heavy sea would probably break.

Between the banks the depths are from 12 to 14 fathoms, bottom sand and shells, and between the S.W. extreme and the land 16 to 19 fathoms, sand and shells. From the N.E. extreme towards Rás Kuerát a flat of 13 fathoms water extends, deepening to 17 fathoms at 7 miles distance from that cape, and decreasing again gradually to 10 fathoms, clay, at one mile distant.

These banks should not be approached under 20 fathoms water.

Soundings.—Off Rás Kuerát the bank to the eastward, is very flat for 30 miles, the depths being from 14 to 17 fathoms, with a sand and coral bottom; from that distance, the soundings rapidly increase in depth to 110 fathoms at 40 miles distance from the coast.

TIDES.—It is high water at full and change at 9h. 20m.; springs rise 10 feet. Flood sets N.W., ebb S.E., at the velocity of one mile per hour. The tides are liable to be affected by currents.

Ghubbet Kuerát is a bay formed in the coast line between Rás Kuerát and Šeraïr, being 10 miles wide and 3 miles deep, the shore of which is a sandy desolate plain, thinly covered with mangrove bushes. The bay is free from all danger, having soundings from 3 to 6 fathoms at a distance of 3 miles from the shore, but is shallower close to the cape; the bottom is of sand and coral.

Seraïr is a low rocky point, with two small rocky islets close off it.

Jezirat Hamar-al-Nafûr is a perpendicular rocky islet, one fourth of a mile in diameter, and 320 feet high; it is visible from the deck of a vessel at a distance of 20 miles. The summit is flat, and split in all directions. Myriads of wild fowl frequent it, and there is an accumulation of guano on it, which is occasionally taken away by the Arabs for the purpose of agriculture. The island is composed of white limestone similar to that of the coast. Close to it, both on the eastern and western sides, are some sunken rocks. It bears from Šeraïr E. by S. distant 3 miles, and from Rás Kuerát N.N.E. $\frac{1}{2}$ E. $9\frac{1}{2}$ miles.

The channel between the island and the mainland is quite free from all danger, having soundings of from 3 to 6 fathoms with a clay bottom. Outside the island the depths are 8 and 9 fathoms at a distance of $1\frac{3}{4}$ miles.

Rás Šiderî is a low, ill-defined, sandy point, $4\frac{1}{2}$ miles N. by E. from Šeraïr, the coast between being alternately sand and cliff. On the point is a small village and a date grove, and immediately inland are several groups of conical hills.

The soundings off this part of the coast are regular, with a muddy bottom, there being 5 fathoms water at a distance of $1\frac{1}{4}$ miles, and 7 fathoms at $2\frac{1}{2}$ to 3 miles.

From Rás Šiderî the coast continues in a direction N. by E. for 7 miles to Rás Nakrait: about half-way between the two capes is a bluff projecting point, rising 465 feet above the level of the sea, both North and South of which the shore is slightly concave with a sandy beach.

Rás Nakhrait is a slightly projecting, bold, bluff point, 365 feet above the sea, and for 2 miles to the southward the coast is of the same bold nature, being a perpendicular cliff down to the water's edge.

From the cape the coast runs N. $\frac{1}{2}$ E. to Rás Suráb, a distance of 12 miles, the beach being sandy the whole way, with a range of hills 700 to 800 feet high rising abruptly above it. N. by E., $3\frac{1}{4}$ miles from Rás Nakhraít is Rás Akait a low projecting sandy point.

From Rás Siderí to Rás Suráb the coast is safe to approach, there being 4 to 5 fathoms water at a distance of a mile from the shore, and to the eastward is an extensive flat of from 6 to 15 and 20 fathoms water, with a muddy bottom towards the shore, and sand and shells with patches of coral farther out.

From Rás Suráb the coast trends to the north-eastward for a distance of 14 miles to Rás Mintót; the shore is low, sandy, and slightly curved, forming the bay called Ghubbet Suráb.

Rás Suráb is a low, sandy, ill-defined point, near which is a small village.

When running into this place, remember that the Sháb-'bú-Saifeh, and other shoals encumber the gulf to the S.E. of Rás Suráb.

Water.—Fresh water is procurable at this point, the fishermen always being willing to carry it off to a vessel at a reasonable charge.

SHÁB-'BÚ-SAIFEH or Palinurus bank, is an extensive coral bank, with 6 to 10 fathoms water over it; the depths on its eastern edge are from 16 to 20 fathoms, and on its western edge from 15 to 17 fathoms. Its greatest breadth is $8\frac{1}{2}$ miles from East to West, and the south point of the bank forms a narrow tail one to $1\frac{1}{2}$ miles in breadth. The north-eastern limit is not well defined, but rather runs into the bank of 12 and 13 fathoms which extends from the south point of Masírah island.

Near the south point of the bank, Jezírat Hamar-al-Nafúr, and Jebel Sawír or south cove, on Masírah island are both visible from the masthead, the former to the westward, and the latter N.E. by E.

Between Sháb-'bú-Saifeh and Sháb Kadún, the depths are from 14 to 17 fathoms, bottom sand and shells, and between Sháb-'bú-Saifeh and Jezírat Hamar-al-Nafúr, a distance of 21 miles, they vary from 12 to 21 fathoms, nearly all mud. On the parallel of the north part of Palinurus bank, the bank of soundings extends 48 miles from the shore.

TIDES.—It is high water, full and change, on the banks, at 9 h. 45 m.; springs rise 10 feet. Flood sets N.W., and ebb S.E., at the rate of one to $1\frac{1}{2}$ miles per hour.

SHÁB GHABÁT is a dangerous patch of breakers, half a mile in length North and South, with 6 to 8 fathoms water close round it. It is situated 7 miles from the shore of Ghubbet Suráb, bearing from Rás Mintót due South, and from Karn Shábatain, S.E.

Three miles to the westward of Sháb Ghabát is a rocky bank, with $2\frac{1}{2}$ to 3 fathoms water on it. At $1\frac{1}{2}$ miles S.S.W. of Sháb Ghabát is a bank with $5\frac{1}{2}$ fathoms water on it.

Jebel, or Karn Shábataïn, a very conspicuous peaked hill, 483 feet high, is distant 8 miles West of Rás Mintót, and forms an excellent mark for the dangerous breakers of Sháb Ghabát.

Rás Mintót is a low, broad, sandy point, forming the N.E. extreme of Ghubbet Suráb, and the S.W. extreme of Ghubbet Mintót. From the south point of the cape a rocky spit with 3 fathoms extends S. by W. 5 miles, with soundings of from 6 to 7 fathoms, mud, close to it on the east side, increasing to 10 and 12 fathoms to the eastward.

Ghubbet Mintót.—Between Rás 'Abana, and Rás Mintót the coast forms a bay 9 miles wide by 3 miles deep. The shore is sandy, backed by a range of hills rising from Rás 'Abana, which turn away to the westward, north of Karn Shábataïn. The bay is free from danger, the soundings being regular, and varying from 3 to 6 fathoms, over a mud bottom.

Soundings.—From the west side of Sháb-'bú-Saifeh, north to Kinásat Hakmán, and to the south point of the island of Masírah, the general soundings vary from 7 to 10 fathoms, sand and coral bottom, with occasional overfalls of one or 2 fathoms, but no dangers exist. From the same side of the shoal towards the west and N.N.W., the soundings are from 13 to 17 fathoms, over a bottom of mud, decreasing to 9 fathoms off Rás Mintót. There are a few detached patches of coral, with 7 to 10 fathoms water over them, but no known dangers exist except Sháb Ghabát, before described.

RÁS 'ABANA is a low, rocky, projecting point, with a low range of hills rising from it, and forms the western extreme of Ghubbet Hashísh.

Water.—Fresh water may be procured at this point in small quantities, the natives supplying it at a reasonable charge.

SHÁB ARZAÏT, a patch of rocks covered at high water, bears from the last-named point S.E. by E. $\frac{3}{4}$ E. $1\frac{3}{4}$ miles, with a clear channel between them of from 5 to 7 fathoms water, rocky ground, the deepest water being close to the shoal.

There is a small rocky bank of 3 fathoms water S.W. $\frac{3}{4}$ W. nearly 2 miles distant from Sháb 'Arzaït, and 2 miles S. $\frac{1}{4}$ E. from Rás 'Abana.

GHUBBET HASHÍSH is a deep bay 7 miles wide by 12 miles in depth, bounded on the east by Rás Shijarét, and on the west by Rás 'Abana. The shore is low, sandy, and desolate, throughout the whole extent of the bay.

On the western side it is bounded in the interior, by a low range of hills. Close to the shore and $1\frac{3}{4}$ miles to the N. by W. of Rás 'Abana, is a natural pyramidal hill, 120 feet in height.

The soundings in the bay vary from 3 to 7 fathoms, gradually decreasing towards the shore and mud banks, the bottom being mud on the western side, and sand and shells on the eastern side. Near the centre of the bay is a low, rocky islet, named Jezírat 'Ab, with a small rock off its south end, from which a mud bank extends 3 miles in a northerly direction, dividing the bay into two parts, and then spreads out on either side to the eastward and westward, extending from the north shore of the bay for a distance of 4 miles. This mud bank dries at low water, rendering the shore inaccessible, except at half tides.

On this extensive mud bank are situated two islands; one, named Rák, is rocky and steep; the other, named Mahót, is low, sandy, and thickly covered with shrubs and mangrove bushes, and has a village on it containing about 300 inhabitants of the Jenebeh tribe.

The portion of the bay, east of Jezírat 'Ab is much confined, being only 2 miles in width, with soundings of from $1\frac{1}{2}$ to 3 fathoms water, over a sandy bottom. On the western side of the island the bay is 5 miles wide, with soundings of from 3 to 6 fathoms, and a muddy bottom.

A little to the westward of a line drawn between the islands 'Ab and Rák, and nearly equidistant from both, there is a patch of sunken rocks.

On the north-eastern side of the bay is the entrance to a creek, which is reported by the natives to communicate with Masírah channel; but more probably with Khór Melh, a salt-water lagoon close to the beach to the eastward of Rás Zaiwarí.

Supplies.—Very good sheep, firewood, and fresh water may be procured at the village on the island of Mahót.

FOGS.—Thick fogs are prevalent in the vicinity of Ghubbeṭ Hashísh and the gulf of Masírah during the north-east monsoon, which are borne down with great rapidity by a sudden impulse of wind from the northward.

TIDES.—It is high water, full and change, at Jezírat 'Ab, at 10h.; rise of springs, 10 feet. Flood sets into the bay N.N.W. Ebb runs S.S.E., at a velocity of three-quarters of a mile per hour.

RÁS SHIJARÉT, off which is a small rocky islet, is a low sandy point, forming the eastern extremity of Ghubbeṭ Hashísh.

The coast from Rás Shijarét turns to the south-eastward, $5\frac{1}{2}$ miles to Rás Zaiwarí; thence East to Rás Mashú, $9\frac{1}{2}$ miles. It is low, sandy, and very desolate for the whole distance, and fronted by a coral bank, which dries at low water, and extends from the shore one half a mile to $1\frac{1}{2}$ miles.

Rás Zaiwarí the south-west point of Bar-al-Hakmán, is a low, sandy, point. Immediately in-shore to the eastward, and only separated from the sea by a narrow ridge of sand, is an extensive salt-water lagoon, called **Khór Melh**.

About half-way between Rás Shijarét and Rás Zaiwarí is another low, round, sandy point, named **Rás-al-Hassá**.

The peninsula which divides Masírah channel from Ghubbet Hashísh is very low, sandy, and covered with bushes for many miles. It is generally called Bar-al-Hakmán.

RÁS MASHŪ is a low, sandy point, forming the western boundary of the south entrance to Masírah channel. The shore between Rás Zaiwarí and Rás Mashú is fronted by a coral reef, with overfalls of from one to 3 fathoms, extending 3 miles off shore.

KINÁSAT HAKMÁN is the name given to the extensive reef which begins at Rás Shijarét, thence stretching off southward to 6 miles S.W. of Rás Zaiwarí, with the foul ground of 5 fathoms extending for 7 miles off shore as far as Rás Mashú. It consists of dangerous coral patches, some of which are dry at low water. The low land of Bar-al-Hakmán is only just visible from the extreme edge of the foul ground, and no part of Masírah island can be seen.

MASÍRAH ISLAND is $35\frac{1}{2}$ miles long, by 9 miles in breadth at its broadest part, containing nearly 200 square miles of surface, and lies N.N.E. $\frac{1}{2}$ E., and S.S.W. $\frac{1}{2}$ W. It is distant from the mainland from 9 to 11 miles, between which are several islets, and numerous shallow banks and rocky patches, leaving only narrow navigable channels. At its southern extreme, the island narrows to a sharp point, called **Rás-'Abú-Rasás**. The northern extreme is 3 miles broad, and rather of a convex form, having a hill on either extremity. The eastern and western coasts are irregular, forming points with small bays between.

The population of Masírah island amounts to about 600 souls, of the Jenebeh tribe, all miserably poor, subsisting chiefly on fish; rice, or any other kind of grain, being beyond their means. They possess no cattle. Fish of very excellent quality is very plentiful all round the island. Sharks abound, and are caught for their fins and tails, which are dried and exported to Mas̄aṭ for the Chinese markets.

The island is barren and sterile, and produces no vegetation beyond two or three date groves and a few pumpkins. There are a few wild animals on the island; gazelles, hyænas, jackals, and, it is said, wild asses.

Copper ore of a poor quality exists near Jebel Sawír; and the remains of smelting furnaces are still extant, said to have been used by the

Persians many years ago. The staple articles of the island are shark fins, dried shark and sir-fish, and *dibbal*, or the horn of the inedible turtle. The inhabitants of Masírah had four large baghalahs, twenty large badáns, and thirty fishing boats.

Turtles abound between Masírah and the mainland, but more particularly in the neighbourhood of Ghubbet Hashish, where they are said almost to swarm. There are two kinds, the edible, probably the *Chelone mydas*, and the inedible *C. imbricata*, or hawk's-bill turtle, both common to the Indian ocean. They grow to much about the same size, one of the former weighed 266 lbs. The latter, or inedible turtle as it is termed, from being much less fleshy and much less fat, yields the turtle shell of commerce. The inedible turtle is much scarcer than the edible one. The carapaces of both species are used by the Arab fishermen for fireplaces in their boats.

Ambergris is also sometimes found on the shores of Masírah, as well as on the opposite coast. This coast abounds in the sperm whale, and several other species of cetacea, and of course with myriads of cuttle-fish and cephalopods of all kinds, on which the former feed. It is stated by the Arab fishermen that sharks are so fond of ambergris, that wherever there is a piece floating—for it is very light, being resinous—it is almost sure to be surrounded by several sharks gnawing at it.

The climate of the island is generally healthy. Thermometer ranges in the N.E. monsoon from 68° to 78° Fahrenheit. Rain is very unusual, but, judging from the enormous watercourses, visible in all parts of the island, it must fall heavily at times.

Aspect.—The island is generally of a hilly aspect, but low in the centre and at the northern extreme. The hills, at their summits, form into clusters of small peaks, the greatest elevation being only 700 feet, and the average about 400 feet. Approaching the island from the north or north-east, the most conspicuous hill is Jebel Madthrúb, a rounded hill on the northern range, elevated 620 feet above the sea, standing amid a cluster of lesser hills, one of which is called Sharp peak from its peculiar form. Nearly all the hills are of volcanic formation, except some table land in the vicinity of Rás Yé.

The soundings on the eastern side of the island are irregular, as regards distance from the shore, but increase gradually to seaward. There are several small shallow patches at a short distance from the shore. The bank of soundings at the southern extreme extends 10 miles South, and 8 miles East, and at the northern extreme 18 miles to the East.

RÁS-'ABŪ-RASÁS, the south point of the island, is a low, rocky, sharp point, having a conspicuous conical hill N.N.E. of it, called Alam-tāin by native navigators, and Jebel Sawír by the islanders.

Dangers.—About three-quarters of a mile S.S.W. of the point is a small dangerous patch of breakers, called Sháb-'Abu-Rasás, with 5 and 6 fathoms water between it and the point. A coral shoal, with 4 and 6 feet water over it, extends from these breakers $1\frac{1}{2}$ miles to the westward, called Sháb Matraī. E. by S. from Sháb-'Abu-Rasás and distant $1\frac{1}{4}$ and $2\frac{1}{2}$ miles, are two other shoal banks, the nearest having 2 fathoms water on it, and the other from 4 to 6 fathoms, with from 10 to 13 fathoms water between them. The sea frequently breaks on all these banks, the south point of the island should therefore not be approached under a distance of 2 miles.

The COAST runs from Rás-'Abu-Rasás N.E. for a distance of 11 miles to Rás Kaidá, forming small rocky points with sandy bays between, the hills rising abruptly from the beach in thick clusters. The shore is bold to approach, and no dangers exist until off Rás Kaidá. There are 5 fathoms water within a mile of the shore, and the edge of the bank is from 6 to 3 miles distant.

Rás Dtharri is a projecting rocky point 6 miles to the north-eastward of Rás-'Abu-Rasás.*

RÁS KAIDÁ is a small, projecting, rocky point, which may be known by a black double-peaked hill rising close to it.

CAUTION.—A coral bank lies $1\frac{1}{2}$ miles East from this point, with 3 to 7 fathoms water over it, and 8 to 11 fathoms between it and the shore. This bank is very deceptive; when the sea is smooth there is no indication of shoal water, but on the slightest swell rising the sea breaks heavily on it. Vessels should therefore particularly avoid anchoring on it, or on any of the shallow banks round the island. The depth of water on these banks will probably be decreasing, being of a coral formation.

The COAST from Rás Kaidá to Rás Zafarnát, a distance of 17 miles in a N.E. by N. direction, the coast forms a slight curve, with a low rocky beach. The coast line is regular, only one small sandy point occurring between the capes. The shore is bold to approach, there being no danger. The bank of soundings extends 10 miles to the south-eastward.

* Rás Kaidá cannot be readily distinguished from the north-east, but is easily recognised from the southward. Remark Book, H.M.S. *Arab*, 1877. Navigating-Lieut. G. S. Keigwin.

Hakkán.—This small village is situated in a date grove close to the beach, and 5 miles N. by W. $\frac{1}{2}$ W. from Rás Kaidá. The island near this part is only 4 miles across, forming low undulating hills.

Supplies.—Fresh water is procurable at the village of Hakkán, also a few pumpkins.

Rás Zafarnát is a rocky point, from which the hills rise abruptly, and bears from Rás Yé S.W. by S. distant 2 miles.

RÁS YÉ or JE, the eastern point of the island, is a bluff point, formed by a ridge of hills running eastward from the centre of the island, of which Jebel Madthrúb is the most elevated and most conspicuous, being 620 feet above the sea, and obtuse in form.

The Soundings off this point are 15 fathoms at one mile distant, and 22 to 25 fathoms at 2 miles, the edge of the bank being 10 miles off shore.

Rás-al-Jezírat is a rocky point $3\frac{1}{2}$ miles to the north-westward of Rás Yé, between which two points the shore is rocky, but free from danger. It derives its name from a small sandy islet, lying close off it to the northward. The cape is prominently marked by a small black cove.

The COAST from Rás-al-Jezírat forms a slight curve or bay with Rás Jidúf, which bears from the former N. $\frac{3}{4}$ W. $7\frac{1}{4}$ miles. In this bay is a rock just awash at low water, $1\frac{1}{4}$ miles from the shore, bearing from Jidúf hill S. by E. $\frac{1}{2}$ E., and from Jebel Madthrúb N.N.E. $\frac{3}{4}$ E.; close round the rock the depths are 3 and 4 fathoms. The other soundings in the bay are regular, there being 7 fathoms water 2 miles off shore, decreasing gradually towards it.

The edge of the bank of soundings is about 18 miles East of Rás Jidúf.

RÁS JIDÚF, the north-east extreme of the island, is a rocky point, having a hill of the same name rising immediately behind it. Off the point a rocky reef extends half a mile, with shallow water on its edge; the point should therefore not be approached under one mile.

RÁS HALF, the north-west point of the island, is a low sandy point, to the south of which, at a distance of $1\frac{1}{2}$ miles, is Jebel Half, a moderately elevated black hill. The coast between the two capes is slightly convex, and fronted by several patches of rocks, dry at low water, extending from a quarter of a mile to half a mile from it.*

* H.M.S. *Nimble* anchored off the north end of Masírah island in 7 fathoms water, sand and rock, with Rás Half bearing S. 69 W., and Rás Jidúf S. 19 E.; the anchorage is not a good one.—Remark Book, Nav. Sub-Lieut. George Pirie, October 1873.

From N. by W. of Rás Half to N. $\frac{1}{2}$ E. of Rás Jidúf, and distant from the shore from 3 to 5 miles, are five shallow patches, with only $2\frac{1}{2}$ fathoms water over them, the soundings between them and the shore being from $3\frac{1}{2}$ to 4 fathoms.

From the north part of the island, a bank of foul ground extends to the mainland, and as far to the north as Rás Shébali, with soundings of from 2 to 4 fathoms on it, on which the sea rolls heavily during the N.E. monsoon, rendering the coast to the southward of Shébali unapproachable, except in small boats.

In coming from the northward, to clear the foul ground extending from the mainland, Jebel Jidúf should not be brought to bear south of S.S.W. If running down the coast in about 15 fathoms water, and it suddenly shoals to 6 or 5 fathoms to the north of Masírah island, before its hills are seen, haul out to the east at once to avoid running into Masírah channel.

KINÁSAT HALF is a shoal partially dry at low water, bearing from Rás Half W. $\frac{1}{2}$ S., distant $1\frac{1}{2}$ miles, with soundings between of from 3 to 7 fathoms. Between it and the great reef of Dimnáh the depth is $1\frac{1}{2}$ fathoms, sandy bottom.

The COAST from Rás Half runs to the S.S.W. as far as Rás Shaḡḡaf, a distance of 9 miles, forming a slight curve, the bank off which dries at low water half to three-quarters of a mile from high-water mark, and rocky foul ground extends off shore one to 2 miles. From Rás Shaḡḡaf the coast turns more to the southward to the town of 'Om-Rasás, a distance of 8 miles, when it turns to the westward 3 miles, forming a bight of that depth. In this bight lies the low sandy island called Jezirat Shágha, which cannot be approached within $1\frac{1}{2}$ miles, on account of a bank, which dries at low water, and extends from it in all directions, meeting the southern shore of the bight, leaving a narrow channel between it and the shore, with depths of from one to 3 fathoms water. Close to the western edge of this bank there are 6 fathoms water.

Dauah is a small village, situated close to the shore, in a grove of date trees, and 2 miles N.N.E. of Rás Shaḡḡaf.

Water.—Good water may be obtained at Rás Shaḡḡaf. Anchor one to $1\frac{1}{2}$ miles off shore in 4 to 5 fathoms water.

BAIYAT-ibn-JUWAÍSİM.—**Jezirat-ibn-Juwaísım** is a small islet lying $2\frac{1}{2}$ miles from the Masírah shore, and on the eastern edge of the extensive shoal Baiyat-ibn-Juwaísım, which is $6\frac{1}{2}$ miles long by 3 miles broad, and is mostly dry at low water. The northern edge of this shoal is $1\frac{1}{2}$ miles from Kinasát Half, with a channel between of 2 to 4 fathoms water. On either side of the shoal is a navigable channel, meeting at

the southern extreme, the eastern one formed between the foul ground off Masírah and the shoal being the narrowest, and only quarter of a mile wide at its northern entrance; the western channel, formed between the shoal and the extensive bank Baiyat Dimnah, is $1\frac{1}{4}$ to 3 miles in width. Three-quarters of a mile South of Baiyat-ibn-Juwaísim is a small shoal patch of 2 fathoms water.

The depths in the eastern channel are $2\frac{1}{2}$ fathoms at the northern entrance, to 4 and 5 fathoms at the southern part. In the western channel the water is deeper, there being from 4 to 5 and 6 fathoms.

At the south end of Baiyat-ibn-Juwaísim the channels join and form into one, being bounded on the east side by the rocky ground off Masírah, and on the west by the bank of foul ground which extends from the mainland, and terminates at Jezírat Sífah (Sanfar). The depths in the channel are from 4 to 6, 7, and 8 fathoms, and the width from $1\frac{1}{2}$ to 2 miles.

West of 'Om-Rasás, and on the edge of the western bank of the channel, is a dangerous sunken rock, with only 2 feet water on it, called Hassar Walad Henal, which must be carefully avoided. From it Jebel Kairán bears S. $\frac{3}{4}$ E., and Jebel Safaij is in one with the south point of Jezírat Shágha.

'OM RASÁS is the chief town of the island, and the residence of the Sheikh, the population of which, together with Safaij, a village contiguous to it, is about 300 souls, who carry on a trifling trade with Maskat. The town is protected in front by the low island, Jezírat Shágha, before mentioned, which cannot be approached within $1\frac{1}{2}$ miles, on account of the shallow bank extending from it in all directions. A small creek runs in between the island and the shore, by which boats can get close up to the houses. From the islet the opposite coast of the mainland is not visible.

Jebel Safaij is a conical hill, close to the southward of the village of that name, with the remains of a fort on the summit.

The COAST.—From the western point of 'Om-Rasás bay the coast runs S.S.W. $\frac{1}{2}$ W. to Rás Kalbán, being rocky and irregular, forming small projecting points, and fronted by a rocky bank, and some rocks above water, extending three-quarters of a mile from the shore, and should not be approached under one mile.

Jebel Kairán, or Saddle hill, is a remarkable double-peaked hill, 385 feet above the sea, situated one mile from the beach, and nearly 4 miles north-eastward from Rás Kalbán.

Rás Kalbán is a low rocky point, with a sandy beach on either side of it, from whence the coast takes a turn south.

OYSTER ISLETS.—To the northward and westward of Rás Kalbán are three small rocky islets, known as the Oyster islets, from their

being covered with that fish. Between the northern islet, or Jezirat Sífah (Sanfar) and the next which bears S.W. by S. from it, distant 2 miles, are two patches of sunken rocks. The southern islet is named 'Amkads, it lies one mile W.N.W. of Rás Kalbán; and makes from the S.W. as a patch of sand with a small black rock at its west end. The islet can be seen about 7 miles.

W. by S. of 'Amkads a shoal having 3 fathoms at high water on it, lies at about one mile from the islet. There is also a shoal a short distance to the northward of the islet.

ZANÁTIYÁT.—S.W. by W. from Rás Kalbán, and distant from 2 to $3\frac{1}{4}$ miles, is a dangerous group of rocks called Zanátíyát, with soundings close round them of from 5 to 7 fathoms.*

The **COAST** from Rás Kalbán runs nearly due south to the south point of the island, is low and sandy, and forms several low projecting points. One mile and three-quarters northward from the south point, and close in with the shore, are two small islets, and $1\frac{1}{4}$ miles farther north are three more islets, running in a direct line from the coast to the westward, off which are some sunken rocks, extending altogether nearly $1\frac{1}{4}$ miles from the shore. The whole are collectively called Banát Marshid. At $2\frac{1}{2}$ miles to the north is a small rocky patch, lying close to the shore.

Kalbán is a small village, situated on the shore, and distant $4\frac{1}{2}$ miles from the south point of the island.

SHÁB SANFAR is a rocky shoal, just awash, bearing W. $\frac{3}{4}$ N. from Jebel Sawír, and distant from the shore $2\frac{1}{2}$ miles. It is three-quarters of a mile long North and South, by half a mile in breadth. This shoal breaks, and can be seen from the masthead at a great distance.

MASÍRAH CHANNEL.—The western shore of Masírah channel from Rás Mashú is low and rocky, with intermediate sandy patches, until within 11 miles of Jezirat Mawal, thence it is low and sandy as far as Rás Shanna.

BAIYAT or REJJAT DIMNAH, is an extensive reef, dry at low water, commencing on the coast 9 miles N.N.E. from Rás Mashú, and continuing to Rás Shanna, where it extends to the eastward 4 miles from the shore.

At 4 miles S.S.W. from Rás Shanna is a low wooded islet, called Mawal, connected with the mainland at half tide, with a creek in a reef navigable for boats up to it.

* No indications of this group of rocks were seen on passing the position, either from the deck or masthead. The depth obtained to the S.W. at high water was $3\frac{3}{4}$ fathoms, with Jebel Sawír bearing S.E. $\frac{1}{4}$ E. and 'Amkads N.E. $\frac{1}{2}$ N.—Remark Book H.M.. *Arab*, November 1877, Nav. Lieut. G. S. Keigwin.

From the head or east point of Baiyat Dimnah, a sandbank, with from $1\frac{1}{2}$ to $2\frac{1}{2}$ fathoms water on it, extends down the whole length of the channel, as far as the Oyster islets, then turns back to the N.N.W., and joins the mainland 7 miles above Rás Mashú, forming a large bight, in which are regular soundings of from 4 to 7 fathoms; bottom of sand and shells.

RÁS SHANNA is a low sandy point, and forms the west point of the northern entrance to the Masírah channel.

TIDES.—It is high water, full and change, at the town of 'Om-Rasás at 10h.; springs rise 10 feet. The flood sets west round the north point of the island, and S.S.W. down the channel; round the south point the flood sets W.N.W. and N.N.E. up the channel, meeting off the town. The ebb tide sets fair the contrary way to the flood. Velocity of the tides varies from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles per hour.

DIRECTIONS for SAILING through MASÍRAH CHANNEL.—In coming from the N.E., steer for Jidúf hill, taking care not to bring it to bear south of S.S.W.; when within one mile of the point, haul to the S.W. and westward, keeping about three-quarters of a mile off shore, and round Rás Half at one-third to half a mile distant. After passing Rás Half steer S.S.W. $\frac{3}{4}$ W. On bringing the black hummock, or Jebel Half to bear E.N.E., the water will probably shoal to $2\frac{1}{2}$ fathoms, increasing again to 3 and 4 fathoms as the islet on the western shoal,—Baiyat-ibn-Yuwaísim,—is approached, which may be passed at a little more than half a mile, the channel here being half a mile in breadth. Proceeding on the same course, the channel becomes much wider, and when off the village of Dauah, the shore may be approached to a distance of half a mile. From Dauah a course S.W. $\frac{3}{4}$ S. will lead clear abreast the town Om-Rasás, off which a vessel may anchor in 5 to 6 fathoms water with the round tower bearing East to E. by S.

If the weather be clear, the line of the shoals is generally well defined, and little danger or difficulty would be experienced, except to the northward of Jezírat-ibn-Juwaísim, where the greatest depth appears to be $2\frac{1}{2}$ fathoms, and the channel very narrow.

Another channel, much broader and deeper, leads to the northward and westward of Baiyat-ibn-Juwaísim; but the eastern channel being the most direct, is perhaps the preferable one.

To pass through the north-western channel, proceed round Rás Half, as before directed, until the black hummock bears E. $\frac{3}{4}$ N.; keep it on that bearing until Jezírat-ibn-Juwaísim is only three-quarters of a point open to the right of Jebel Madthrúb. Jebel Kairán, or Saddle hill, will then bear

S. by W., which, kept on that line of bearing, will lead down clear to the anchorage off the town, as before stated.

The channel abreast the town is 2 miles wide, increasing in width to the southward; the eastern side is bounded by the bank of rocky ground with some rocks above water, which extends from the shore of the island, and should not be approached under three-quarters to one mile. The opposite side of the channel is bounded by a sandbank with $1\frac{1}{2}$ to 2 fathoms water on it, and very steep-to. The soundings in the channel vary from 5 to 7 fathoms.

Proceeding to the southward from abreast the town, steer S.W. $\frac{3}{4}$ S., and when the southern of the Oyster islets,—Jezírat 'Amkads,—is seen, keep it on that line of bearing until near and pass it on either side, as most convenient, at a distance of one-quarter to one-third of a mile.

After passing Jezírat 'Amkads, keep it bearing N.E. by E., to avoid the dangerous group of rocks Zanátíyát, until Jebel Sawír bears S.E. by S., when a vessel will be clear of them and may steer South, keeping a good look-out for Sháb Sanfar, a rock just awash, bearing from Jebel Sawír W. $\frac{3}{4}$ N.

South Entrance.—In the south entrance to the channel the soundings are from 7 to 9 fathoms, sand and coral, with occasional overfalls.

Entering the channel from the southward or south-eastward, Rás-'Abú-Rasás should be rounded at a distance upwards of 2 miles, and a vessel should be 4 miles from the island before standing to the northward, after which the above directions reversed will serve to guide a vessel through.

The channel is little frequented by native vessels of more than 30 or 40 tons burthen.

Caution.—The channel is decidedly very unsafe for general navigation, and the passage should never be attempted except under the pressure of extreme necessity. The channels are very narrow in some places, and entirely destitute of good leading marks to guide a vessel through. The chief, or sheikh, of the island also has always displayed the greatest repugnance to the presence of European vessels in those waters, and any defenceless vessel falling into his hands would probably meet with anything but good treatment.

Rás Shébali, on the mainland, is a low, rocky point, with some bays on the north side; the point bears from Rás Shanna N. by E. $\frac{1}{2}$ E. 13 miles, the coast between being very low and sandy, with bushes.

As before stated, a bank of foul ground, with from 2 to 4 fathoms water on it, extends from Rás Shébali to the island of Masírah, on which the sea rolls heavily during the N.E. monsoon. See page 146.

About a mile inland from the cape, is a village bearing the same name, containing about 200 inhabitants of the Whebah tribe.

The Whebah have but few boats, and being very poor are obliged to have recourse to the inflated sheepskin, called *Kirbeh* (vulg. *girib*). It is commonly used by the inhabitants of this coast from Rás Rús to the village of Hásek, in Kuriyán Muriyán bay. But with the poor Whebah its use is seen in perfection. As soon as a shoal of fish is viewed from the heights by those who are watching for them, the whole assemble, and seizing their skins and casting-nets, rush to the water's edge. Here the skin is quickly soaked and inflated, after which the hind and fore legs are tied together with a string. Thus prepared they step into the ring, and, slipping the skin up towards the lower part of the stomach, throw their casting-nets across the left shoulder, and wading into the water up to their necks, sit upon the string, which rests against the back part of their thighs, and thus paddle away with their hands to the place where the fish are. In this way as many as twenty at a time will enter the water and swim out to a distance of 2 miles. When they have arrived among the fish, they throw their casting-nets, and gathering them up, return to the shore with what they contain, having no means of securing the fish on the spot.

Supplies.—A few goats may be obtained here, as at nearly all the villages on this part of the coast.

TIDES.—It is high water, full and change, at Shébali, at 10h.; springs rise 10 feet.

The COAST from Rás Shébali runs N.E. 43 miles to Rás Jibsh. For 13 miles the land rises in cliffs of from 30 to 70 feet elevation, with sandy spaces intervening; after which the coast presents an unvaried line of low sand downs, without the slightest trace of vegetation or inhabitants. A heavy surf beats on the shore, rendering landing impracticable in ships' boats.

The coast as far north as Rás Jibsh is inhabited by the Beni Jenebeh tribe, who bear a generally bad character, it is therefore not safe to land. They are all *wreckers*, and consider everything that strands on this coast the property of the tribe to whom the part of the coast belongs. They are probably the worst characters on the coast.

From Rás Jibsh to Rás-al-Khabbah, a distance of 53 miles, the coast trends in a general N.N.E. $\frac{1}{2}$ E. direction; it is all low and sandy, and of an uniform desolate appearance, with several small isolated hills near the coast, one of which, Jebel Jiffán, is of round form.

The country bordering on the sea between Rás Jibsh and Rás-al-Hadd is styled Al-Ashkharah, or the eastern country, and forms no portion of the province of 'Oman, which lies contiguous to it on the west near the coast. It is entirely destitute of vegetation, but in the interior is diversified with

extensive date groves and running streams, with small patches of cultivation, chiefly jowári and cotton.

RÁS JIBSH is a small, and slightly projecting sandy point, having immediately over it a hill about 100 feet in height, nearly covered to the summit with white drift sand, three little dark peaks, of which the hill is composed, showing above the sand. On the centre peak are the remains of an old tower. On the S.W. slope of the hill is a small village containing about 60 inhabitants. In clear weather Jebel J'alán, 3,900 feet high, may be seen when off Rás Jibsh: in appearance it approximates to a tongue form, the high bluff being towards the east.

On the north side of the point is a small bay, affording a good landing place in southerly winds, but much exposed to N.E. winds.

Soundings.—The bank of soundings extends off shore 30 miles at Rás Shébali, decreasing to 13 miles off Rás Jibsh, the 100-fathoms line being at those distances. The soundings are regular, the 20-fathoms line being $3\frac{1}{2}$ miles off Jibsh, increasing its distance to the southward. The shore may be safely approached in any part into 5 fathoms water.

The bank of soundings decreases in width above Rás Jibsh, and at Rás-al-Khabbah the 100-fathoms line is only 2 miles from the coast, and the 20-fathoms line one mile off, the lead therefore affords little guide. The soundings throughout are regular, and the coast may be approached in any part within a mile in safety.

AL-ASHKHARAH, or LASHKHARAH is a long straggling town and fort, 27 miles from Rás Jibsh, containing about 1,000 inhabitants of the Beni-bú-'Alí tribe, who have several boats. The country in the neighbourhood is a perfect desert and affords no supplies, beyond a few goats and fowls.*

Jebel Seyhah, an oblong black hill, is several hundred feet high, bearing N.W. by W. $\frac{1}{2}$ W., distant 6 miles from Lashkharah, with a conical hill a short distance to the N.E. of it. When seen bearing W.N.W. it forms a saddle hill, and is a good leading mark for making the place.

RÁS GOMÉLEH is a low sandy point, 17 miles S.S.W. of Rás-al-Khabbah, backed by a ridge of low hills, one of which, called Jebel

* North-east of the town is a rocky point, the shore from there sweeping round to the North-West and North, forming a small bay, with apparently a clean and clear bottom, the soundings decreasing gradually to the beach. The *Arab* anchored in $7\frac{1}{4}$ fathoms water, from a half to two-thirds of a mile from the beach. Landing was effected without difficulty in this bay, although the surf broke heavily on shore on either side of it.

The water in the vicinity of Al-Ashkharah is very varied and changeable in its colour.
—Navigating Officers' Remark Book, H.M.S. *Arab*, November, 1877.

Goméleh, is of a conical form, and not easily discernible from the N.E.

Rás Rúš is a low rocky point with a few sandy hillocks on it, bearing S.W., 3 miles from Rás-al-Khabbah. Here is a village containing about 300 inhabitants, of the Beni-bu-'Alí tribe.

From 2 to 4 miles to the southward of this point there is a coral bank, with from 7 to 10 fathoms water on it in overfalls.

Anchorage.—The bay between the two points affords tolerable shelter from northerly winds; anchorage in 6 fathoms, with Rás-al-Khabbah bearing N.E. by N.

JEBEL J'ALÁN.—This conspicuous mountain is situated inland, and 3,900 feet above the sea. At its southern slope are the chief towns of the Beni-bú-Hassein and Beni-bú-Alí tribes, who are rather friendly to Europeans. In clear weather this mountain may be seen at a distance of 60 miles.

RÁS-AL-KHABBAH is a low rocky point. Here the sandy shore terminates, and cliffs of from 60 to 100 feet in height extend with but few short breaks to within 3 or 4 miles of Rás-al-Hadd. All this part of the coast is very bold, with no safe anchorage.

When 20 miles below this point, the high mountains of Kalhát will be seen towering behind Jebel J'alán.

JEBEL KEMS, or KHAMIS, a mountain 2,700 feet above the sea, is a rugged peak of dark colour, and is seen to the right of Jebel J'alán when off Lashkharah.

RÁS-AL-JUNAIZ, the east point of Arabia, is a low cliff, the soundings off which are as deep as at Rás-al-Khabbah, and there is a depth of 800 fathoms only 5 miles from the land. From it Rás-al-Khabbah bears S. $\frac{3}{4}$ W., 12 miles, and Rás-al-Hadd, N. by W. $\frac{3}{4}$ W., 7 miles.

JEBEL SAFÁNÁT, called also Jebel Fánús by Arab navigators, are two remarkable hills close together and to the shore at Rás-al-Junaiz. They are quoin-shaped, of equal height, 850 feet above the sea, with the steep side to the westward, and stand on a table-land 100 feet in height.

Aspect.—Being isolated and close to the east point of Arabia, they are very good land marks for that cape; and when the comparatively low land about there is below the horizon, they appear, from the north or south, like an island with a deep notch in it. They are visible above 30 miles.

The inhabitants of the coast between Rás Jibsh and Rás-al-Hádd, are of the Beni-bú-'Alí tribe, and are friendly to Europeans.

RÁS-AL-HÁDD.—The low cliffs of Rás-al-Junaiz sink into a low sandy shore 3 miles below this cape, which is a very low sandy point, with a few date trees, in the little town of Al-Hádd, lying one mile south-west of it. The town consisted, in 1848, of some round towers and a number of mat huts, and contained about 700 of the Beni Ghazal tribe. The people of the town are civil, as is the case at all the towns north of this. It is subject to the 'Imám of Maskat. The authority of that prince, south of this point, is quite nominal.*

Soundings.—To the north of this cape no soundings are to be obtained more than half a mile from the shore; to the east the 100 fathoms bank of soundings extends about 3 miles, and the 20-fathoms line is one mile off shore.

This bank is famous for large fish.

Supplies.—Indifferent water may be had abreast a small clump of date trees 2 miles to the southward; and bullocks and goats may be had at the town.

ANCHORAGE.—The best anchorage is with the town of Al-Hádd bearing West in 8 to 10 fathoms water, coral bottom, half to three-quarters of a mile off shore. The water shoals rapidly from 10 fathoms to 7, 6, and 5 fathoms, the bottom being distinctly visible. This anchorage is exposed to all winds from the sea.

TIDES.—It is high water, full and change, at the cape, at 9h. 30m.; springs rise 9 feet.

The currents round the cape are strong and variable, depending on the variable winds.

CHALLENGER BANK.—On August 9th, 1830, at 1.30 p.m., discoloured water, with rippings, was observed from H.M.S. *Challenger*, in 22° 29' N., and about 40 miles East from Rás-al-Hádd. On sounding, two casts of 13 fathoms water were obtained, and soon after no ground at 65 fathoms, the sea having resumed its natural colour. The bank appeared 3 miles long by half a mile broad. Having been observed so shortly after noon, the position given is probably correct. The *Palinurus*, while surveying the coast made diligent search for it, but without success.

* Rás-al-Hádd, is a very low sandy point, and not easy to make out, the three towers at the back were the only things to be seen.—Remark Book, H.H.S. *Rifleman*, June, 1875.—Nav. Sub-Lieut. F. Roberts.

The **COAST** changes its direction at Rás-al-Hádd to an average of W. $\frac{3}{4}$ N. for 15 miles, to the town of Súr. From Súr it sweeps gently round to the N.W., to Rás-ash-Shajar, the mountains Jebel Kalhát descending precipitously to the sea, with very deep water close to the shore. Cliffs recommence 2 miles west of the cape, and extend uninterruptedly for 6 miles. There is no danger on the coast between Rás-al-Hádd and Rás-ash-Shajar. Between Rás-al-Hádd and Súr, the 100-fathoms line is at an average distance of 3 miles from the shore, and from a few miles above that place, to 10 miles north of Rás-ash-Shajar, the bank of soundings is only half a mile broad.

Khór-al-Hajara is a small and shallow inlet used by small fishing-boats. Its entrance between two low cliffs, is 2 miles W. by S. of Rás-al-Hádd. There are two fathoms water at the entrance, shoaling gradually as the basin is approached. The inner half is dry at low water. Its direction is South for half a mile, then East one mile, reaching close to the back of Al-Hádd village. At the eastern extremity of this khór are a number of ruins, and among them a large square building of modern construction, forsaken, and also in ruins. There is also a little jetty or wharf at the eastern end, which served as a landing-place when, according to tradition, the khór was much deeper than it is at present. The ruins do not appear to be the remains of buildings of any consequence, although they are said to be those of a very large town.

KHÓR JARÁMAH, the entrance to which is $1\frac{1}{2}$ miles to the west of the last, is a basin with a tortuous entrance one mile long and only 150 yards broad, between cliffs 60 feet high. The inside basin is $2\frac{1}{4}$ miles in length, in a north-western and south-eastern direction, one mile in breadth, and at a short distance beyond the entrance consists of an extensive shoal flat. The depths are 4 to 6 fathoms, mud, between the entrance points; but at a quarter of a mile further in, shoal ground having a depth of 7 to 8 feet, extends from the western shore, leaving on the east side a channel only 60 yards wide from cliff to shoal.* The southern shore is low with a mangrove swamp, and an isolated black hill close to it.

It is used by native vessels as a harbour of refuge only, there being no village on its shore, nor is any water procurable. A town once existed on the south-west side of the khór, but it is said to have been abandoned from want of water.†

* Navigating Lieutenant L. G. Stovin, H.M.S. *Vulture*, 1880.

† See plan of Khór Jarámah, on chart No. 10 c; scale, $m=3$ inches.

Navigating Sub-Lieut. T. C. Pascoe, H.M.S. *Vulture*, 1872, remarks : In the S.W. monsoon there is good anchorage on the bank off the entrance to the khór, half a mile off shore in 10 or 12 fathoms, mud and sand, with the low west point apparently half-way across the entrance channel, and Rás-al-Hádd tower E. by S. $\frac{3}{4}$ S. The anchorage is not safe in the N.E. monsoon.*

There is an abundance of fish in the khór, and several beaches on which the sein may be hauled.

TIDES.—It is high water, full and change, at 9h. 30m. ; springs rise 10 feet. Velocity of tides in the narrows, 2 miles per hour.

DIRECTIONS.—A small flat-topped hill, bearing S.W. by S., leads up to the entrance. Entering Khór Jarámah keep close to the eastern shore, till past the shoal, which situated a quarter of a mile within the entrance, extends from the western shore and leaves no channel on that side; the channel on the eastern side is only 60 yards wide from cliff to shoal. Then keep in mid-channel, and pass on either side of a small island dividing the passage at the mouth of the basin,—the eastern channel is preferable, being more direct and deeper,—and anchor as soon as past the island. Flaws of wind are of course prevalent in the entrance, vessels should therefore be prepared with a stern anchor in case of accident.

Rás Sherh is a slightly projecting point of the cliff, 8 miles W. by N. of Rás-al-Hadd; from this point to Súr there is a ridge of low broken hills with patches of cliff.

SÚR is a large town, or rather two towns, situated on a khór or back-water; where the small native craft lie. There are also two forts surrounded by huts to the westward of it, all included under the general denomination of Súr. The total number of inhabitants may be 10,000.

When on with Súr creek, Jebel Khamis bears S.W. by S., this may be useful as a guide to find the place. Just north of Súr, the bank of scundings is only one mile wide.

The town on the east bank, called Hejáh, is inhabited by people of the Beni-bú-'Alí tribe; the other, Um Kreymeteyn, by the Beni Jenebeh, who are often at feud with each other.

The khór is extensive but narrow at the entrance, with a bar having only 3 feet of water on it at low water; within are 2 or 3 fathoms water.

There is little to be seen of the town of Súr from the sea, the two forts are on higher ground and first seen.

* Khór Jarámah is an excellent harbour and easily accessible for steam vessels drawing less than 15 feet.—Captain's Remark Book, H.M.S. *Ready*, June, 1880.

A large trade is carried on between this place and India, Zanzibar, and the Persian gulf in baghalahs, and numberless fishing boats which frequent the whole coast of Arabia, besides several fishing boats which belong to the place. The trade is principally confined to imports, the only exports being dried dates and salted fish. They manufacture a coarse checkered cloth for turbans, &c. Many Banyans, natives of Kutch, are settled here, and the trade is very much in their hands.

Supplies.—Cattle and vegetables might be obtained here, but it is doubtful if any water could be spared for a ship.

ANCHORAGE.—A ship should anchor off the town in 10 to 15 fathoms water, sandy bottom, about a half to three-quarters of a mile off shore; there is also anchorage in 5 fathoms water, about a mile off the easternmost tower (west town). It is quite an open roadstead.

TIDE TABLE FOR THE ISLAND OF SOĠŌTRA, THE GULF
OF 'ADEN, AND THE EAST COAST OF ARABIA.

PLACE.	High Water, Full and Change.	Rise. Springs.	PLACE.	High Water Full and Change.	Rise. Springs.
Island of SoĠŌtra.	h. m.	feet.		h. m.	feet.
Ghubbeṭ Né - -	7.0 irr.	7	Ṣughrá - - -	8.0	6
Gollonsír - - -	7.20	8	Maġáṭein - - -	9.0	6
Abd-al-Kúri - -	8.30	6	Rás-al-'Aṣidah -	8.30	5½
Kal Farúm - - -	8.20	6	Makalleh - - -	8.30	7
Somáli Coast.			Rás Sharmah - -	9.0	8
Rás Hafún - - -	6.15	4	Merbát - - - -	9.0	6¾
Cape Guardafui -	6.15	6	Kuriyán Muriyán bay and islands.	8.20	6½
Bander Alúleh - -	6.45	6	Rás Madraka - -	9.0	10
Bander Gorí - - -	8.45	—	Sháb Kadún - - -	9.20	10
Berbereh - - - -	7.15	9	Jezírat Hamar-al-nafúr	9.30	10
Zeyla - - - - -	7.15 irr.	8½	Sháb-'bu-saifeh -	9.45	10
Coast of Arabia.			Ghubbeṭ Hashísh -	10.0	10
Bab-el-Mandeb, strait and Perim island	8.0	5*	'Om-rasás-Masírah -	10.0	10
Bander Feíkam - -	10.0	8½	Rás Shébali - - -	10.0	10
'Aden and adjacent bays.	7.30 to 9.30	7†	Rás-al-Hádd - - -	9.30	9
			Khór Jarámah - - -	9.30	10

* Neaps rise 3 feet.

† Neaps rise 4½ feet.

TABLE OF POSITIONS *

ON THE

COASTS OF THE ISLAND OF SOKÓTRA AND ISLANDS ADJACENT, IN
THE GULF OF 'ADEN AND THE EAST COAST OF ARABIA.

Place.	Particular Spot.	Latitude, North.	Longitude, East.
SOKOTRA AND ISLANDS ADJACENT.			
Tamarida - - -	Mosque - - -	12 39 00	53 58 54
Gollonsír - - -	Mosque - - -	12 41 15	53 29 30
Rás Sháab - - -	Extreme point - - -	12 33 20	53 19 0
Rás Kattani - - -	Bluff - - -	12 21 20	53 33 0
Rás R'dresseh - - -	South low point - - -	12 34 45	54 30 50
Jezírat Saboynea - - -	Centre peak - - -	12 39 0	53 12 0
Jezírat Darzi - - -	Eastern bluff - - -	12 6 20	53 19 30
Jezírat Samheh - - -	Western point - - -	12 9 20	53 1 0
'Abd-al-Kúri - - -	N.E. point - - -	12 11 15	52 25 0
Ditto - - -	So. pt. of western ext. - - -	12 13 20	52 4 0
Kal-Farún - - -	Centre - - -	12 26 00	52 9 00
SOMÁLI COAST.			
Rás Hafún, E. ext. of Africa	East point - - -	10 26 30	51 22 20
Rás 'Asir, N.E. ext. of Africa	East point - - -	11 50 30	51 16 10
Rás 'Alúleh - - -	E. point of ent. to lagoon - - -	11 59 45	50 46 0
Bander Marayeh - - -	Centre of town - - -	11 43 00	50 28 10
Bander Khór - - -	Fort at entrance to river - - -	11 31 15	49 54 40
Rás Gori - - -	Extreme point - - -	11 30 00	49 43 30
Bander Ghásim - - -	Western fort - - -	11 17 40	49 12 20
Rás Hadahdeh - - -	West point - - -	11 20 15	48 40 30
Bander Gori - - -	South fort - - -	11 10 30	48 13 10
Meyet or Burnt island	Centre - - -	11 13 00	47 16 00
Karram - - -	Centre of village - - -	10 50 00	45 48 0
Berbereh - - -	Lighthouse - - -	10 25 0	44 59 0
Sháb Madúji - - -	Dry sandbank - - -	11 3 20	43 41 0
Zeyla - - -	Mosque - - -	11 22 00	43 29 0
Arab shoal - - -	Five fathoms - - -	11 38 50	43 39 0
Seagull shoal - - -	N.W. extreme - - -	11 25 0	43 38 0
Mushahh island - - -	N.E. point - - -	11 43 0	43 13 30
Tejúreh - - -	Mosque - - -	11 46 30	42 52 20

* The longitudes depend on Bombay Observatory being 72° 48' 4" East from Greenwich ;
and on 'Aden (Telegraph Office) being 44° 58' 32" East from Greenwich.

44 59 07.4

72 48 53.4
72-48-53.4

Place.	Particular Spot.	Latitude, North.	Longitude, East.
SOMÁLI COAST— <i>cont.</i>			
Rás-al-Bír - - -	Point - - -	11° 58' 00"	43° 22' 30"
Rás Siján - - -	Summit of centre - -	12 28 20	43 17 0
Jezírat Sab'ah (Brothers) -	Summit or highest - -	12 28 00	43 23 0
Perím island - - -	Lighthouse - - -	12 39 00	43 25 0
COAST OF ARABIA.			
Rás 'Arah, So. point of Arabia.	Low point of cape - -	12 37 30	43 57 0
Rás Ka'ú - - -	Cape - - -	12 39 45	44 26 0
'Aden - - -	Telegraph office - -	12 46 40	44 58 32
Rás Seilan - - -	Low eastern cape - -	13 3 30	45 20 10
Sughrá - - -	Sheikh's castle - -	13 22 0	45 40 15
Makátein - - -	Black ruin - - -	13 24 50	46 26 0
Ras-al-'Asidah - - -	Hill at point - - -	13 57 00	48 9 00
Sikkah or Jibús island -	Centre - - -	13 54 40	48 22 30
Rás Burúm - - -	South-east house of town -	14 20 10	48 56 10
Makalleh - - -	Governor's house, flagstaff on	14 31 15	49 7 0
Shahah or Sherh - - -	Custom house - - -	14 43 50	49 34 30
Ras Sharmah - - -	Single house - - -	14 49 0	49 56 30
Kosair - - -	High house - - -	14 54 40	50 16 0
Abd-al-Kúri, or Palinurus shoal.	Shoalest spot - - -	14 55 00	50 39 30
Rás Sharweín - - -	East point - - -	15 21 0	51 39 30
Rás Farták - - -	Ditto - - -	15 39 0	52 15 0
Rás Risút - - -	Extreme point - - -	16 56 30	54 00 00
Merbát - - -	Town - - -	16 59 00	54 42 54
Rás Nús - - -	Point - - -	17 15 0	55 18 0
Jezírat Halláníyah - -	N.E. bluff - - -	17 32 45	56 2 30
Rás Sherbedát - - -	Point - - -	17 53 15	56 20 00
Rás Madraka or Cape Isolette.	Islet off - - -	19 00 25	57 51 0
Sháb Kadún, or San Carlos banks.	S.W. extreme - - -	19 20 00	57 50 0
Ditto - - -	N.E. extreme - - -	10 34 45	58 6 15
Sháb-bú-saifeh, or Palinurus bank.	South point - - -	19 49 30	58 12 0
Jezírat Hamar-al-nafúr -	Centre - - -	19 47 36	57 48 0
Rás 'Abú-rasás, Masírah island.	Point - - -	20 10 00	58 38 0
Rás Yé, Masírah island -	Point - - -	20 31 30	58 58 0
Rás Jidúf - - -	Point - - -	20 41 40	58 55 0
Rás Jibsh - - -	Point - - -	21 27 30	59 21 15
Rás-al-Jineyz - - -	Extreme point - - -	22 26 00	59 50 30
Rás-al-Hádd - - -	Ditto - - -	22 32 40	59 48 00

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